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QUARTERLY WEATHER REPORT

OF THE

METEOROLOGICAL OFFICE

For 1877.

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PREFACE.

THE present volume of the Report is compiled on the same plan as that for 1876, the only difference in execution being that the Chart Plates are lithographs instead of being copper-plate engravings.

In addition to the usual tabular Appendices, this volume contains two special papers. The first is by Mr. Scott, "On the Diurnal "Range of Rainfall at the Seven Observatories in connexion "with the Office;" the second is by Mr. W. N. Shaw, "On Evaporimeters."

ROBERT H. SCOTT,
Secretary.

Meteorological Office,
December 1885.

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QUARTERLY WEATHER REPORT.

(NEW SERIES.)

1877.

INTRODUCTORY REMARKS.

The area to which the following Report applies is mainly that contained between the 40th and 65th parallels of North Latitude, and the Meridians of 15° East and West of Greenwich, the British Isles lying nearly centrally within it.

The information on which the Report is based has been derived chiefly from the Daily Weather Reports issued by this Office, the curves of the self-recording observatories, the observations made over the United Kingdom at Stations of the Second Order, and the information published in the "Bulletin International" of Paris. These have occasionally been supplemented by information from the North German and Russian Weather Reports.

The Report for each quarter is divided into sections as follows:—

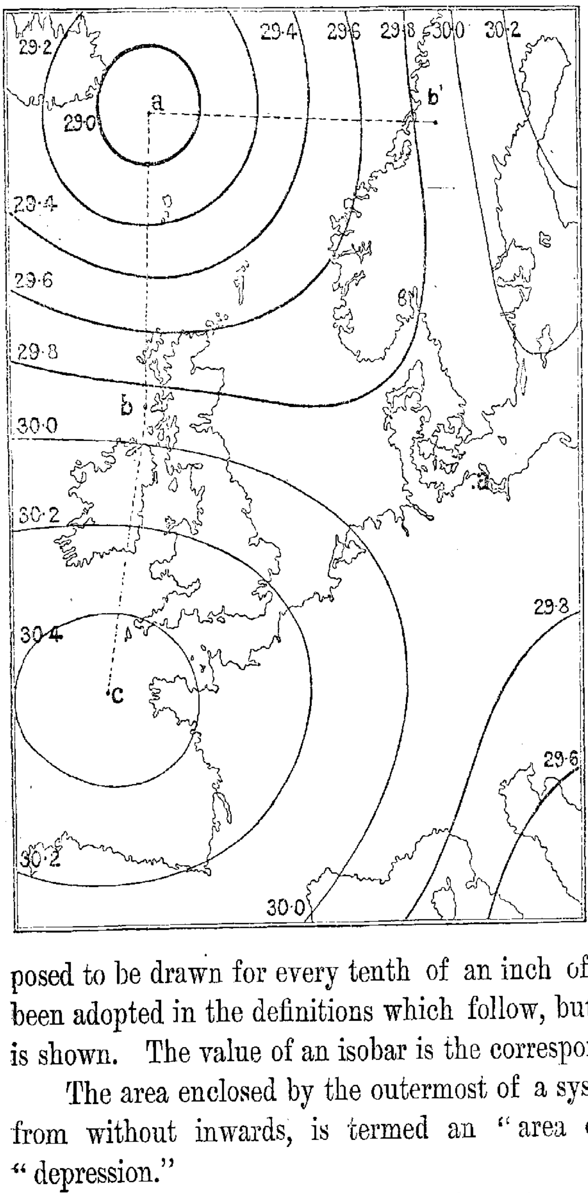
Section 1.—A "General Summary," or statement, of the chief features of the weather for the whole quarter, reference being made only to the most marked variations which have occurred; together with a brief account of the principal changes which have taken place in the distribution of atmospheric pressure during the period.

Section 2.—A table of the principal Cyclonic Systems, giving an account of the size, movements, and other peculiarities of each of the more important depressions mentioned in Section 1, accompanied by smaller Tables showing the velocities of wind which were recorded instrumentally during the more serious gales. This is followed by a Table of the principal Anticyclonic Systems which have appeared over or near our area, together with some Notes on the general distribution of pressure which prevailed at those periods during which there was no definite cyclonic system traceable.

Section 3.—Remarks on the distribution of Wind, Pressure, Temperature, Vapour, and Rainfall for each month; accompanied by Tables showing the mean values for the different meteorological elements for the observatories, the Stations of the Second Order, and the Telegraphic Reporting Stations, and by two monthly plates. One of these plates shows graphically the relative prevalence of wind from each of eight points, and the other (1) the distribution of mean Pressure, (2) the movements of the depressions referred to in Section 2, (3) the distribution of mean Temperature, and (4) the amount of Rainfall measured at each station.

The Report is illustrated by two sets of plates, (1) Chart Plates, showing by small maps the distribution of pressure and the winds prevailing over our area at 8 a.m. and 6 p.m. daily; and (2) the usual Plates giving on a reduced scale the curves of the self-recording instruments at the seven Observatories, in the same way as in the previous volumes of this Report.

Section 1 needs no explanation.



Section 2.—Some of the terms employed, though familiarly used, need to be more accurately defined than hitherto. The accompanying figure, which is purely hypothetical, is intended to illustrate the definitions which follow. It exhibits an area of low pressure, in which the lowest readings are rather below 29·0 inches, lying between the Färoe Isles and the coast of Iceland, while over the northern half of the Bay of Biscay, and at the mouth of the English Channel is an area of high pressure, in which the highest readings are slighly above 30·4 inches. These are the two principal centres of pressure distribution shown; but in Sweden the isobars marked "30·0" and "30·2" point to the existence of another area of high pressure over the extreme north of Europe, while in Austria and northern Italy the isobars of "29·8" and "29·6" point to a second area of low pressure lying over the Adriatic and western part of European Turkey.

Isobaric lines, in accordance with a generally accepted convention, are supposed to be drawn for every tenth of an inch of barometric pressure. This convention has been adopted in the definitions which follow, but in the diagram only every alternate isobar is shown. The value of an isobar is the corresponding barometric reading.

The area enclosed by the outermost of a system of isobars of which the value decreases from without inwards, is termed an "area of low pressure," or "cyclonic area," or "depression."

Similarly, the area enclosed by the outermost of a system of isobars the value of which increases from without inwards, is termed an "area of high pressure," or "anticyclonic area."

The "size" of either system is the extent of the area enclosed by such outermost isobar.

The "form" of the system is the generalized form of its isobars. As the isobars are only roughly similar to one another this definition does not admit of much precision.

The centre of a cyclonic or anticyclonic system is the point at which the pressure is least or greatest, respectively. The position of the centre is not in general known from direct observation, but may be inferred with a sufficient approach to the truth from the form of the interior isobars.

The depth of a cyclonic system, and the height of an anticyclonic system, is the difference between the height of the barometer at the centre, and at the bounding isobar of the system. The motion of the system is that of its centre.

The gradient between two places is the difference between the simultaneous heights of the barometer at those places divided by the distance between them. A hundredth of an inch is taken as the unit of barometric height, and 15 nautical miles as the unit of distance.

The resulting gradient is thus the same as in the French measure, in which the units are a millimeter for barometric height, and a degree of the meridian (or 60 nautical miles) for distance. In this Report the gradients are always measured at right angles to the isobars.

In describing the size, depth, or rate of motion of cyclonic systems, the following scales of nomenclature have been employed:—

SIZE	Very small	When the radius of the outer isobar is less than 50 miles.
	Small	„ „ „ is more than 50, less than 150 miles.
	Moderate	„ „ „ „ 150 „ 300 „
	Large	„ „ „ „ 300 „ 500 „
	Very large	„ „ „ „ 500 miles.
DEPTH	Very shallow	When the difference of pressure between the margin and centre does not exceed 0·2 in.
	Shallow	„ „ „ „ „ varies from 0·2 to 0·5 „
	Moderate	„ „ „ „ „ „ 0·5 „ 0·9 „
	Deep	„ „ „ „ „ „ 0·9 „ 1·4 „
	Very deep	„ „ „ „ „ exceeds 1·4 in.
RATE OF MOTION	Very slow	When the average rate during the period referred to is less than 10 miles per hour.
	Slow	„ „ ranges from 10 to 20 miles per hour.
	Moderate	„ „ „ 20 „ 35 „
	Rapid	„ „ „ 35 „ 50 „
	Very rapid	„ „ exceeds 50 miles per hour.

In preparing the Table of Anticyclonic Systems, different scales of nomenclature have been adopted for size and height, but that for rate of motion has been retained.

For size these systems have been divided into only two classes: (1) Large—or those which cover extensive tracks of the earth's surface, which (as a rule) travel very slowly, and of which only a small portion is usually observable over our area; (2) Small—or those which either (*a*) are subsidiary to larger anticyclones, or (*b*) appear as a temporary phenomenon, between two cyclonic disturbances, often travelling at a considerable rate.

For the Height of Anticyclonic systems the following scale is employed:—

VERY SMALL	when the difference between the pressure at the outer isobar and that at the centre is 0·2 in., or less.
SMALL	„ „ „ „ is more than 0·2 „ but does not exceed 0·4 in.
MODERATE	„ „ „ „ „ 0·4 „ „ 0·7 „
GREAT	„ „ „ „ „ 0·7 „ „ 1·0 „
VERY GREAT	„ „ „ „ exceeds 1·0 „

The approximate values for the highest pressures about the centre of each anticyclone are quoted in figures whenever they are known.

The Form of an anticyclonic system cannot always be ascertained, as it frequently happens that the greater part of it lies over localities for which the observations are either altogether wanting, or are very few in number.

In *Section* 3 the tables contain the mean values of the chief meteorological elements for each month: (A) for the Self-recording Observatories, (B) for Stations of the Second Order, and (C) for the Telegraphic Reporting Stations.

Those for the Observatories are arranged in the same order as that in which they appear on the plates, and the data given are mainly identical with those printed in Table I. Appendix I. p. [1], where the monthly values for each observatory are summarised for the whole year. In the latter table, however, the barometrical readings are not reduced to sea level. The Stations of the Second Order and Telegraphic Reporting Stations have been arranged in eleven groups, corresponding with the eleven meteorological districts into which the United Kingdom has been divided, for Agricultural and Sanitary purposes, and are printed in order of latitude, beginning with the station which lies furthest north.

The data in Table B. for the Stations of the Second Order have also appeared, arranged differently, in the form of Monthly Summaries, in the "Meteorological Observations from Stations of the Second Order in 1877."

The Monthly Plates are as follows:

(I.) A Wind Chart showing by "area wind-roses" the prevalence of the wind from each of eight points. The wind-roses are drawn on a principle similar to that employed by the Office in discussing the observations for the sea adjacent to the Cape of Good Hope, the frequency of winds blowing from between any specified points being indicated by the *area* of the portion of the wind-rose comprised between the corresponding limits. In the roses here employed the total area of those portions of the rose which indicate the winds and calms respectively (viz., the "petals," and the small shaded central circles), is equal to one-half the area of the circle round, or within, which they are drawn.

(II.) A Monthly Weather Chart, containing four maps of small size, which exhibit:—

(1.) The Distribution of Mean Pressure, shown by isobars, drawn for each half-tenth of an inch, the mean barometric readings employed being those for 8 a.m. recorded at our Telegraphic Reporting Stations; but the mean pressure for the month at each Observatory, derived from 24 hourly readings each day, is inserted on the map close to the geographical position of the Observatory.

(2.) The movements of the depressions are shown in the following manner. The position of the centre of each of the chief depressions is determined as nearly as possible for 8 a.m. and 6 p.m. on each day during which the depression was within the area of our information; and these points are united by straight lines. The lines have arrow-heads drawn on them, showing the directions of the movements.

(3.) The distribution of mean temperature, shown by isotherms, drawn for each degree Fahrenheit; the mean temperatures employed being the numerical means of the maxima and minima for each day recorded at the Stations of the Second Order and the Telegraphic Reporting Stations. The mean temperature for each of the observatories, derived from 24 hourly readings each day, is also inserted. A correction at the rate of 1° F. for each 300 feet of vertical height has been added to the mean values in order to reduce them to the sea level.

(4.) The Rainfall chart shows in figures the Total Amount of Rain recorded during the month at each station. The values are inserted close to a dot, indicating the geographical position of the station to which it refers.

When both an Observatory and a Telegraphic Reporting Station are situated at the same place, the value for the Observatory has been used in preference to that for the Telegraphic Reporting Station, but both values are given in the tables.

In preparing the Chart Plates the isobars have been drawn, as a rule, for each alternate tenth of an inch; but when the difference between the highest readings reported and the highest isobar at any given time exceeds a tenth of an inch, the approximate value of such highest pressure is stated in figures, which are placed in their proper position on the map.

A broken, or dotted, isobar indicates uncertainty as to its course, owing to deficiency of information.

The prevalent winds are shown by arrows, which are drawn flying with the wind. The force is indicated by the number of barbs and feathers thus: ➳ = a gale (forces 8 to 12); ← = a strong wind (forces 5 to 7); ⟵ = a light to moderate wind (forces 1 to 4); and ⊙ = a dead calm.

PART I.

SECTION I.

GENERAL SUMMARY FOR THE QUARTER.

THE weather during the first three months of the year was not marked by any sudden or violent changes. The range of pressure, although considerable, was not unusual, while the temperature of the United Kingdom was, upon the whole, somewhat above the average of the ten years 1866–1875. During January and February it was slightly lower than that average in the north, while over the southern and south-eastern counties it was considerably higher. In March, however, there was a change, and then the temperature over England was nearly exactly normal, while in Scotland the weather was somewhat cold. Southerly and Westerly winds largely predominated, but Easterly and Northerly winds blew occasionally, especially over the northern portions of the kingdom. As a rule the depressions experienced followed an easterly course, frequently to the northward of our islands; but in two or three cases there were marked exceptions, in which they took a southerly path towards southern Europe.

January 1st–9th.—The distribution of pressure over Europe at the commencement of the year was very simple. The highest pressure lay over Italy, while a belt of low readings stretched from south-west to north-east across north-western Europe, in which region two distinct cyclonic systems existed on the morning of the 1st, one over the Gulf of Finland, and the other over the British Isles. The latter of these was a deep depression (No. I.), which was travelling rapidly towards Denmark, producing moderate gales from the North over the northern portion of Great Britain and Ireland, with heavy snow in Scotland, and South-westerly gales on the south coast of England. By the morning of the 2nd the centre of this system had reached the Gulf of Finland, and the barometer had risen considerably over Great Britain; in the course of the day, however, pressure began to give way again in the west, the fall being accompanied by a rapid rise of temperature, and on the 3rd another disturbance (No. II.) reached the Irish coast. By that time, however, the high pressure had extended northward over central Europe, and formed a barrier to the eastward progress of the system, so that its centre never advanced over Great Britain, but remained for some days off our western coasts, producing South-east to South-west winds in the south (which were extremely violent in the south of Ireland on the 3rd), and Easterly winds in Scotland, with heavy and general rain. On the afternoon of the 6th a further decrease of pressure took place, and at the same time the wind increased to a strong gale from the Southward all over the southern half of the kingdom; but the centre of the disturbance travelled away to the northward, and on the 7th a recovery of pressure set in, and continued without interruption till the 10th.

January 10th–19th.—On the 10th a zone of high pressure stretched in a north-westerly direction from Italy to the British Islands and the North Sea. During the latter part of the day a small cyclonic system (No. III.) passed along the Channel, and caused fresh Easterly winds to blow over the southern portion of England, but by the following morning its centre had reached Belgium, and apparently was becoming quickly filled up. The high pressure over central Europe then gave way, and an anticyclonic system began to develope itself over Sweden, simultaneously with the appearance of another area of high readings over the Peninsula. On the 16th the two systems became united, and formed a band of high pressure stretching from Spain to Lapland. In the meantime the barometer over Great Britain had varied considerably, under the influence of a series of depressions which had been travelling in a northerly direction at some distance from our north-western coasts. The direction of the wind had varied from between South and West, but its force had only occasionally reached that of a gale. With one of these disturbances (No. V.) there occurred, on the 19th, a remarkable temporary elevation of temperature, amounting to 5° or 6°, and lasting for three hours at Valencia, one and a half hours at Armagh, and about four hours at Glasgow and Aberdeen (see Plate IV.). This depression followed a more easterly path than its predecessors, and passed over Sweden, the high pressure which had existed there giving way, while a very rapid rise of the barometer took place in the rear of the disturbance. At the close of the 19th this rise was going on briskly all over the British Isles.

January 20th–26th.—The rise of the barometer continued throughout the 20th, and at the same time an anticyclone became developed over France, from whence it moved up to the Netherlands and Germany; on the morning of the 21st the central isobar of 30·6 inches had assumed a pear shape, and embraced an area stretching from the Wash to Brussels, and thence by Orleans nearly to Brest. These conditions lasted until the 23rd, the temperature continuing low, although there was no severe frost and but little fog. The anticyclone then spread out over the western portion of the Continent, and formed a band of high readings stretching from Spain to the Baltic. Meanwhile pressure had been giving way over the British Isles since the 22nd, and on the 23rd a depression (No. VI.) advanced from the Atlantic. Owing, however, to the high pressure over the Netherlands, it was unable to force its way eastward, and only skirted our western and northern coasts, producing slight Southerly gales. Twenty-four hours later this disturbance was followed by a more serious one (No. VII.), which pursued a similar track, but threw off a subsidiary depression over the Irish Sea, where it was shown at 8 a.m. on the 25th, and from thence the secondary travelled by 8 a.m. next morning across southern England to Holland. The changes in pressure, temperature, and wind, consequent upon the passage of the centre of this subsidiary disturbance near to Kew at 3 p.m., are well shown by the curves of that observatory on Plate V.

January 27th–31st.—The changes just described entirely broke up the anticyclonic system, one portion of which moved to the north-eastward and disappeared over Russia, while the other reappeared over the Peninsula and the Bay of Biscay. On the 27th a slight increase of pressure occurred over Great Britain and Ireland, but a fresh decrease soon followed, and during the night a large depression (No. VIII.) advanced quickly to the north of Scotland, and at 8 a.m. on the 28th heavy South-westerly gales were blowing in the north. The disturbance, however, was not very important, and it passed away in a north-easterly direction to the Norwegian coast. On the 30th it was succeeded by a more serious depression (No. IX.), the centre of which passed across Scotland during the early morning, and lay near Aberdeen at 8 a.m. Gradients were steep, and heavy Westerly and North-westerly gales blew very generally, accompanied by snow in the north. A rapid rise of the barometer then took place over the British Islands; the centre of the depression travelled away to Denmark, where it was located at 8 a.m. on the 31st, and finally it became dispersed over Russia.

February 1st–10th.—A considerable rise in temperature took place over Great Britain on the 1st, but pressure remained unchanged until the 2nd, when a brisk fall occurred at the northern stations, accompanying the passage along our north-western coasts of a depression (No. X.) which produced moderate Southerly and Westerly gales over the northern and western portions of the kingdom. The barometer had, however, risen very rapidly over Scandinavia on the 1st, and an area of high pressure had developed itself there, which now extended southward and joined the southern area, thus constituting once more a belt of high readings over western Europe. But these conditions were of only brief duration, as the depression just referred to caused the barometer to rapidly fall again in the north, while at the same time the high pressure became firmly established over France. Gradients for moderate to fresh Westerly winds were thus created, and continued for several days, with high temperatures and moderately fine weather over most of the country, although, owing to the passage of some disturbances to the northward of Scotland, a good deal of rain and snow fell in that part of the kingdom.

February 11th–18th.—On the morning of the 11th the centre of a shallow depression (No. XI.) reached the neighbourhood of Aberdeen, and during the day it continued to travel rapidly across the North Sea to Denmark, where its centre lay at 6 p.m., and from thence it passed on to central Europe. This was succeeded on the 12th by another disturbance which, taking a more northerly course only affected Scotland, and became filled up before it reached Norway; in connection with it, however, a good deal of snow fell in the north of Scotland. During the latter part of the 15th a third system made its appearance in the north, and passed slowly across the North Sea. An area of high pressure then became developed over northern Scandinavia, and between it and the southern area, which still existed over France and the Bay of Biscay, a belt of low readings stretched from north-west to south-east, across the North Sea.

February 19th–20th.—A general decrease of pressure took place over Great Britain during the 19th, caused by the approach of a deep depression (No. XIII.) which reached the west of Scotland during the night, and passed in a south-easterly direction across northern England to Holland, where its centre was shown at 8 a.m. on the 20th. The path of the centre evidently lay between Glasgow and Stonyhurst, and very close to the latter place, as is indicated by the changes of wind and pressure shown on Plate X. It is remarkable that at Aberdeen the wind *veered*, as if the centre of the disturbance had passed to the northward of that station, so that apparently the depression which passed over south Scotland was merely subsidiary to a larger one lying off the Scotch coast. Very violent North-west gales accompanied the passage of the depression, which continued to travel, but more slowly, eastward to Germany.

February 21st–28th.—Under the influence of the cyclonic conditions existing on the 19th and 20th the Scandinavian high pressure had entirely disappeared, whilst simultaneouslythe southern system had moved northward to the west of Ireland, causing the barometer to rise all over the British Islands. Northerly winds with cold showery weather consequently prevailed during the next few days, but late on the 23rd the wind once more backed to the westward, the change accompanying a fresh decrease of pressure due to the approach of an extensive, but slowly moving, disturbance (No. XIV.), which appeared on the 24th off the north of Scotland, and remained for three days within our area. During the night of the 25th a small depression, subsidiary to this system, passed rapidly over the British Isles and reached the North Sea by 8 a.m. 26th, when a Westerly gale was blowing in the Channel, while moderate or fresh Northerly winds, with rain and snow on the east coast, and a generally low temperature, prevailed over the other portions of the kingdom. These Northerly winds continued to blow, though with less force and with fine bright weather, during the remainder of the month. A steady and general increase of pressure began on the 26th, and the southern area of high pressure, which had temporarily moved southwards, reappeared over Ireland and the Channel.

March 1st–9th.—The anticyclone now moved eastward over France, and pressure gave way a little, chiefly in the north, concurrently with the advance of a slight depression to the northward of Scotland. With this change the wind became Southerly or South-westerly, and temperature rose very considerably all over the kingdom (see Plate XII.); the increase during the 24 hours ending at 8 a.m. 2nd, exceeded 20° at most stations, and at Leith it amounted to as much as 26°. For some days, however, the movements of the barometer were only slight, and the area of high pressure continued to travel towards Germany, but on the 4th a fresh anticyclonic system began to show itself over the Bay of Biscay, and the wind again veered to the Northward, and temperature fell. These conditions continued till the 6th, when a general fall of the barometer took place all over the kingdom, but more especially on the north-eastern coasts, and by 6 p.m. a subsidiary depression had reached the neighbourhood of the Firth of Forth. By 8 a.m. on the 7th this disturbance (No. XV.) had travelled southward as far as Scarborough, and had deepened considerably; Northerly gales were experienced in the Irish Sea and on the east coast, and snow showers occurred at several stations. The depression continued to travel rapidly southward and reached Italy on the 8th.

In its rear pressure rose again, and moderate Northerly winds prevailed, with generally fair weather. On the 9th the high pressure disappeared from the Bay of Biscay, and the wind over the British Isles became more Westerly, while the barometer fell a little in Scotland and Ireland.

March 10th–19th.—A new centre of high pressure now developed itself over the Baltic and North Germany, and the wind over the United Kingdom backed still more, and became Southerly and South-easterly. During the night of the 10th a depression passed to the north-west of our Islands, but at too great a distance to produce much effect on the wind, and on the 12th another slowly moving depression (No. XVI.) passed along the northern coast of Scotland to Norway, causing the wind to veer to West and North-west and blow hard for two or three days, although without much rain. This disturbance was the forerunner of a series which passed eastwards to the northward of our Islands, and with its arrival the high pressure again disappeared from Germany and once more reappeared in the south-west. The general tendency of the barometer, however, for several days was downwards; gradients gradually became less steep, and the southern area of high pressure was entirely dispersed, while the temperature was low and the sky remained clear, as is shown on Plate XVI. by the well-marked diurnal range of temperature at all the observatories.

March 20th–26th.—A shallow depression, which lay at 8 a.m. on the 20th over the south-west of France, moved slowly during the next 36 hours in a north-easterly direction to Holland, producing strong Easterly breezes in the Channel. On the 21st a slight general recovery of pressure set in, but during the night of the 22nd this was followed by a fresh decrease, and at 8 a.m. on the 23rd the centre of a new depression had arrived off the south-west of Ireland. This system, however, did not advance further than the Irish Sea, but on the 24th it was succeeded by a much more important one (No. XVII.) which was accompanied by very low barometer readings for the season, along the line of its track. The storm moved in a south-easterly direction, the centre passing very slowly over Cornwall to the west coast of France, where it lay on the morning of the 26th, having become partially filled up *en route*. It produced very heavy rain at several stations, with strong Easterly winds and gales in the north.

March 27th–31st.—The depression (No. XVII.) had now quite disappeared, and a general and steady rise of the barometer began, accompanied by light winds and fine weather. On the 31st a large depression passed eastward, outside the northern coast of Scotland, and caused the wind to freshen somewhat from the West at the northern stations, where the barometer fell slightly; but its influence was not felt in the south and west, in which region an area of relatively high pressure had again developed itself. By the close of the day the centre of this disturbance had reached Norway; the wind had veered to North-west in Scotland, and the barometer was again recovering from the temporary fall which the depression had occasioned in that part of the kingdom.

SECTION II.

TABLE OF CYCLONIC SYSTEMS.—JANUARY, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. I. January 1-2.	No. II. January 2-8.	No. III. January 10-12.
Form	Somewhat oval; longer axis lying S.W. and N.E.	Unknown; never fully developed over our area.	Circular.
Size	Large	Very large	Very small.
Depth	Deep	Deep	Shallow.
Where first Observed	Off west coast of Scotland	Off the south-west coasts	Entrance of Channel.
Direction of Motion	North-easterly	At first east-north-easterly, afterwards northerly.	Easterly.
Rate of Motion	Rapid	Very slow	Moderate.
Regions passed over by Steepest Gradients.	The Channel and north of France	Entrance of the Channel and Irish Sea.	West of France.
Termination	Passed away over the Baltic	Passed back again over the Atlantic	Travelled over North Germany and became filled up.
Time under Observation	About 2 days	About 5 days	About 58 hours.
Accompanying Winds	South-westerly gales on south coast of England, North-easterly gales on the north and east coasts.	South-west gales in the south (very violent in Ireland), and South-east gales in the north.	Strong East winds and slight gales over the south of England.
„ **Weather**	Wet and cold, particularly in Scotland.	Warm for the season	Thick and cloudy, but cold.
„ **Rainfall**	Heavy, especially in north, with much snow.	Very heavy and general	Not very heavy.
REMARKS	This system had two distinct centres. The northern portion moved slowly across the North Sea. The southern one advanced very rapidly to the south-west of England during the night of December 31st-January 1st, and was filled up there, while the northern portion became deeper, producing Easterly gales in Sweden.	This system advanced from the west and affected the whole of the North Sea, causing a fall of 0·6 inch of the barometer in Denmark on the 5th; it was, however, pushed back by a wave of high pressure coming from central Europe, and another depression advanced to the west of Ireland on the 7th, but was again unable to force its way to the eastward. The track of these systems cannot be shown with certainty, and is therefore omitted from the chart.	This small depression travelled eastward along the Channel, and therefore, while Easterly winds were experienced over England, fresh Westerly winds were blowing over France.

Table of Cyclonic Systems—January, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. IV. January 13-18.	No. V. January 19-20.	No. VI. January 23-24.
Form	Unknown, not developed within our area.	Circular	Unknown
Size	Large	Large	Unknown
Depth	Deep	Deep	Deep
Where first Observed	Off the Hebrides	Off west coast of Ireland	Off west coast of Ireland
Direction of Motion	Northerly	North-easterly	North-north-easterly
Rate of Motion	Moderate	Very rapid	Rapid
Regions passed over by Steepest Gradients.	North of Scotland	England, the North Sea, and Norway	Western coasts of Ireland and Scotland.
Termination	Disappeared to the northward of the British Isles.	Travelled to Norway, striking the coast about lat. 65°.	Disappeared after passing the Shetlands.
Time under Observation	Five days	About a day and a half	36 hours
Accompanying Winds	Slight Southerly gales	Southerly gales, especially at Scilly	Southerly gales in the north and west.
„ Weather	Rather cold	Very warm on 19th	Temperature rose rapidly in Ireland and fell again the next day.
„ Rainfall	Not heavy	General, but not very heavy	Not much rain, except at Valencia
REMARKS	This was a series of depressions which rapidly succeeded each other and travelled in a northerly direction, skirting our north-western coasts, but which did not advance to Sweden. Pressure in that region was scarcely affected.	This depression was really subsidiary to a more extensive one apparently lying off the west coast of Scotland, but barely affecting our weather. It influenced the temperature at the northern stations in a remarkable way.	This depression was unable to force its way over England owing to the high pressures prevailing to the eastward.

TABLE OF CYCLONIC SYSTEMS—JANUARY-FEBRUARY, 1877.

No. VII. January 24-26.	No. VIII. January 28-30.	No. IX. January 30-31.	No. X. February 2-6.
Unknown	Unknown, probably circular	Circular	Apparently circular.
Apparently large	Large	Large	Large.
Deep	Deep	Deep	Deep.
Off west coast of Ireland	Off the Hebrides	Off Aberdeen	In north of Scotland.
North-easterly	North-easterly	East-south-east	North-easterly.
Moderate	At first moderate, then slow	Very rapid	Slow.
North of Scotland	North of Scotland	Central England	Scotland.
Disappeared after throwing off a subsidiary depression (see Remarks).	Passed off to coast of Norway, lat. 65°	Disappeared over central Russia	Travelled to Lapland.
About 24 hours	About 2½ days	About 24 hours	About 4 days.
Heavy Southerly gale in north of Scotland.	Heavy Southerly gales in Scotland	Westerly and North-westerly gales in England.	At first Southerly gales, then Westerly winds.
Temperature high, weather cloudy	Temperature above average	Temperature high	Temperature about average.
Heavy in the south of Ireland	Not heavy	Heavy in north, with some snow	General, but not very heavy.
This system at 8 a.m. on the 25th showed signs of the formation of a subsidiary depression, which was clearly defined over Holland by 8 a.m. on the 26th, with an independent circulation. It subsequently became filled up there.	This system threw off a subsidiary depression No. IX.	This depression travelled very rapidly across northern Scotland during the early morning of the 30th, and had reached the neighbourhood of Aberdeen by 8 a.m., it then passed on to Denmark and finally disappeared over Russia.	The centre of this system passed at some distance from our coasts, its shape, &c. cannot therefore be ascertained with much accuracy.

TABLE OF CYCLONIC SYSTEMS—FEBRUARY, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XI. February 11-12.	No. XII. February 14-17.	No. XIII. February 19-21.
Form	Circular	Irregular	Circular
Size	Small	Large	Large
Depth	Shallow	Moderate	Moderate
Where first Observed	In north of Scotland	Off Hebrides	In north of Scotland
Direction of Motion	South-easterly	Easterly	South-easterly
Rate of Motion	Rapid	Slow	Very rapid
Regions passed over by steepest Gradients.	North of England	North of England and south of Scotland.	West of England and Irish Sea
Termination	Passed on to central Russia	Became filled up on the eastern side of the North Sea.	Passed out over North Germany
Time under Observation	Two days	Three days	Two days
Accompanying Winds	Local Northerly gales	No gales. West to North-west winds	Heavy North-west gales in St. George's Channel and at Scilly.
„ **Weather**	Weather colder and cloudy	Cold	Temperature low
„ **Rainfall**	General, with snow in Scotland	Showery in general	General, but not heavy
REMARKS	This was very soon followed by another small depression, which however did not advance to Norway, but became filled up off the north coast of Scotland.	This system threw off a subsidiary depression which travelled southeastwards to Denmark.	This system became much deeper as it passed over England.

TABLE OF CYCLONIC SYSTEMS—FEBRUARY-MARCH, 1877.

No. XIV. **February 23-27.**	No. XV. **March 6-8.**	No. XVI. **March 12-15.**	No. XVII. **March 24-26.**
Irregular	Irregular	Oval	Circular.
Large	Moderate	Large	Moderate.
Deep	Slight	Deep	Deep.
Over the Shetlands	Over Finland	Off the Shetlands	Off Valencia.
Easterly and south-easterly	Southerly	North-easterly	South-easterly.
Slow	Rapid	Slow	Moderate.
North of Scotland and subsequently south of England.	England	North of Scotland	East of Ireland.
Passed eastwards over Russia	Passed down to Mediterranean	Broke up off the coast of Norway	Passed to Brittany and became filled up.
Four days	About two days	About four days	Three days.
Northerly gales generally	Heavy Northerly gales on east coast and in St. George's Channel.	North-westerly and Westerly gales in north.	Complete circulation of winds. Heavy East gale in Irish Sea on 25th.
Temperature low	Very cold	Temperate	Temperate.
Showers of snow and hail	Frequent showers of snow and rain, not very heavy.	Not heavy	Heavy where the gale blew.
This depression was followed by a subsidiary which moved due eastwards over the south of the United Kingdom between the 25th and 26th, and then was filled up.	This depression was really subsidiary to a larger system over Scandinavia, which, however, disappeared on the 8th.	This was apparently a series of depressions which passed eastward at a considerable distance to the north of Scotland, and were checked on reaching the Norwegian coast by a ridge of high pressure over northern Europe.	This depression caused very low barometer readings in the south of Ireland and south-west of England.

TABLES OF GALES.

No. 1. (CYCLONIC SYSTEM, No. 1.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Jan. 1, 1877.													
Sandwick	10 a.m. (1st).	E.N.E.	—	—	—	—	1 p.m. (1st).	N.E.	3	11 a.m. (1st).	E.N.E.	38	—
Aberdeen	8 a.m. (1st).	N.E.	11 a.m. (1st).	N.E.	50	4	5 p.m. (1st).	N. by E.	9	1 p.m. (1st).	N.E	54	—
Holyhead	—	—	2 p.m. (1st).	N.N.E.	42	4	8 p.m. (1st).	E.N.E.	6	5 p.m. (1st).	N.N.E.	45	—
Kew	8 a.m. (1st).	S.S.W.	—	—	—	—	2 p.m. (1st).	S.W.byW.	6	8 a.m (1st). Noon (1st).	S.S.W. W.S.W.	35	—
Yarmouth	Noon (1st).	S.W.byW.	2 p.m. (1st).	W.S.W.	40	1	4 p.m. (1st).	W. by S.	4	2 p.m. (1st).	W.S.W.	40	—

No. 2. (CYCLONIC SYSTEM, No. 2.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Jan. 2-4, 1877.													
Sandwick	9 p.m. (3rd).	N.E. by E.	—	—	—	—	3 a.m. (4th).	N.E. by E.	6	11 p.m. (3rd).	E.N.E.	36	—
Aberdeen.	6 p.m. (3rd).	E.N.E.	—	—	—	—	Midnt. (3rd).	E. by S.	6	8 p.m. (3rd).	E.N.E.	38	—
	2 a.m. (4th).	E. by N.	7 a.m. (4th).	E.N.E.	43	7	9 p.m. (4th).	E.N.E.	19	10 a.m. (4th).	E.N.E.	46	—
Glasgow	1 a.m. (4th).	N.E. by E.	—	--	—	—	4 a.m. (4th).	N.E. by E.	3	1 and 2 a.m. (4th).	N.E. by E.	32	—
Alnwick Castle.	4 p.m. (3rd).	E.	—	—	—	—	8 p.m. (3rd).	E. by S.	4	5 and 7 p.m. (3rd).	E.	33	—
Seaham	6 p.m. (3rd).	E. by N.	—	—	—	—	8 p.m. (3rd).	E.	2	7 p.m. (3rd).	E. by N.	33	—
Holyhead.	8 p.m. (2nd).	E.	—	—	—	—	Midnt. (2nd).	E.	4	10 p.m. (2nd).	E.	38	—
	—	—	3 a.m. (3rd).	E.	53	16	9 p.m. (3rd).	E.	18	Noon (3rd).	E.	64	—
Valencia.	—	—	10 p.m. (2nd). 7 a.m. (3rd).	E.S.E. E. by S.	41 42	4 1	9 a.m. (3rd).	S.E. by E.	11	11 p.m. (2nd). 1 and 7 a.m. (3rd).	E. bS.	42	Wind also slightly exceeded 30 miles at 10 and 11 p.m. on the 4th.
	10 a.m. (3rd).	S.S.E.	8 p.m. (3rd).	S.S.E.	42	4	4 a.m. (4th).	S.	18	10 p.m. (3rd).	S.S.E.	46	—
Falmouth.	1 p.m. (2nd).	E.S.E.	—	—	—	—	6 p.m. (2nd).	S. by W.	5	2 p.m. (2nd). 5 p.m. (2nd).	E.S.E. S.E. by S.	35	—
	7 a.m. (3rd.)	S.	—	—	—	—	11 a.m. (3rd).	S.S.W.	4	9 a.m. (3rd).	S. by E.	38	—
Kew	Midnt. (2nd).	E. by N.	—	—	—	—	2 a.m. (3rd).	E. by N.	2	Midnt. (2nd).	E. by N.	34	—
Yarmouth	11 p.m. (2nd).	E. by S.	3 a.m. (3rd). 6 a.m. (3rd). 8 a.m. (3rd).	E. by S. E. E.	40 42 43	2 1 2	4 p.m. (3rd).	S.E.	17	8 a.m. (3rd).	E.	44	—

No. 3. (CYCLONIC SYSTEM, NO. 2.)

Stations.	VELOCITY 30-40 Miles per Hour.		VELOCITY Exceeding 40 Miles per Hour.				VELOCITY Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	MAXIMUM VELOCITY.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Jan. 6-9, 1877.													
Sandwick	6 p.m. (8th).	N.W.byN.	—	—	—	—	4 a.m. (9th).	N. by E.	10	7 p.m. (8th). 8 p.m. (8th).	N.W.byN. N.N.W.	39	—
Aberdeen.	8 p.m. (7th).	S.S.E.	—	—	—	—	1 a.m. (8th).	S. by E.	5	9 p.m. (7th).	S.E. by S.	36	—
Glasgow	6 p.m. (7th).	S.	Instrument not in proper action between 3 a.m. and 11 a.m. 8th. Maximum velocity recorded was 37 miles at 1 a.m. 8th, direction S. by W.										
Stonyhurst.	6 p.m. (6th).	S.	7 p.m. (6th).	S.	40	1	9 p.m. (6th)	S. by W.	3	7 p.m. (6th).	S.	40	—
Holyhead	4 p.m. (6th).	E. by S.	5 p.m. (6th). 2 a.m. (7th). 10 a.m. (7th).	S.S.E. S.S.W. S.	48 42 44	7 2 13	8 a.m. (8th).	S.S.W.	40	5 p.m. (6th). 5 p.m. (7th).	S.S.E. S. by W.	54	—
Armagh	1 p.m. (7th).	S. by E.	—	—	—		3 a.m. (8th).	S.S.W.	14	3 p.m. (7th). 10 p.m. (7th).	S. S.S.W.	37	—
Valencia	1 p.m. (6th).	S.	—	—	—	—	6 p.m. (6th).	S.S.W.	5	3 p.m. (6th).	S.	39	—
	7 p.m. (6th).	S. by W.	8 p.m. (6th).	S.W.	54	26	1 a.m. (8th.)	S.W.	30	10 a.m. (7th).	S.W.	69	Wind also slightly exceeded 30 miles at 3, 4, and 5 a.m. on the 8th.
Falmouth.	11 a.m. (6th).	S.	Noon (6th). 7 p.m. (6th).	S. by E. S.S.W.	46 43	3 4	1 a.m. (7th).	S.S.W.	14	1 p.m. (6th).	S. by E.	50	—
	1 p.m. (7th).	S.S.W.	—	—	—	—	10 p.m. (7th).	S.S.W.	9	7 p.m. (7th).	S.W. by S.	36	—
Kew	5 p.m. (6th).	S.	6 p.m. (6th).	S.	44	1	10 p.m. (6th).	S. by W.	5	6 p.m. (6th).	S.	44	—
	7 a.m. (7th).	S.	—		—	—	10 a.m. (7th).	S.S.W.	3	8 a.m. (7th).	S. by W.	35	—
Yarmouth.	6 p.m. (6th).	S. by W.	—	—	—	—	1 a.m. (7th).	S. by W.	7	8 p.m. (6th).	S.	35	—
	8 a.m. (7th).	S.	—	—	—	—	Noon (7th).	S.S.W.	4	10 a.m. (7th).	S.	38	—

No. 4. (CYCLONIC SYSTEM, NO. 3.)

Jan. 10-11, 1877.													
Kew	8 p.m. (10th).	E.N.E.	—	—	—	—	4 a.m. (11th).	N.E. by E.	8	10 p.m. (10th).	E.N.E.	37	—
Yarmouth	2 p.m. (10th).	E.	8 p.m. (10th).	E.	50	17	9 p.m. (11th).	N.E.	31	1 a.m. (11th).	E.	57	—

No. 5. (Cyclonic System, No. 4.)

Stations.	Velocity 30-40 Miles per Hour. Com-menced.	Velocity 30-40 Miles per Hour. Direction of Wind.	Velocity Exceeding 40 Miles per Hour. Com-menced.	Velocity Exceeding 40 Miles per Hour. Direction of Wind.	Mean Vel.	Duration in Hours.	Velocity Fell below 30 Miles per Hour. Ended.	Velocity Fell below 30 Miles per Hour. Direction of Wind.	Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity. Hour.	Maximum Velocity. Direction of Wind.	Maximum Velocity. Velocity.	Remarks.
Jan. 17-18 1877.													
Sandwick	8 a.m. (18th).	S.E. by S.	9 a.m. (18th).	S.E. by S.	42	5	5 p.m. (18th).	S.E. by S.	9	10 a.m. (18th).	S.E. by S.	45	—
Aberdeen	10 a.m. (18th).	S.S.E.	—	—	—	—	2 p.m. (18th).	S.S.E.	4	11 a.m. (18th).	E.S.E.	37	—
Glasgow	11 a.m. (18th).	S. by E.	—	—	—	—	1 p.m. (18th).	S.	2	11 a.m. (18th).	S. by E.	33	—
Stony-hurst.	11 a.m. (18th).	S.	—	—	—	—	6 p.m. (18th).	S. by W.	7	4 p.m. (18th).	S.	39	—
Holyhead	2 a.m. (18th).	S. by E.	5 a.m. (18th).	S. by E.	49	9	3 p.m. (18th).	S.W.	13	8 & 10 a.m. (18th).	S. by E.	55	—
Armagh	3 a.m. (18th).	S.S.E.	—	—	—	—	8 a.m. (18th).	S.	5	7 a.m. (18th).	S. by E.	37	—
Valencia	8 p.m. (17th).	S. by W.	10 p.m. (17th).	S.	49	8	7 a.m. (18th).	W.S.W.	11	4 a.m. (18th).	S. by W.	59	—
Fal-mouth.	5 a.m. (18th).	S. by W.	—	—	—	—	9 a.m. (18th).	S. by W.	4	6 a.m. (18th).	S. by W.	33	—
	11 a.m. (18th).	S. by W.	—	—	—	—	7 p.m. (18th).	S.S.W.	8	2 p.m. (18th). 5 p.m. (18th).	S. by W. S.S.W.	34	—

No. 6. (Cyclonic System, No. 6.)

Jan. 22-24, 1877.													
Sandwick	Noon (23rd).	S. by E.	—	—	—	—	1 a.m. (24th).	S.E. by S.	13	7 p.m. (23rd). 8 p.m. (23rd).	S. by E. S.S.E.	38	Wind also slightly exceeded 30 miles at 4, 5, & 11 a.m. 24th.
Glasgow	11 p.m. (23rd).	S. by E.	—	—	—	—	2 a.m. (24th).	S.	3	1 a.m. (24th).	S. by E.	34	—
Stony-hurst.	5 p.m. (23rd).	S.	—	—	—	—	9 p.m. (23rd).	S. by W.	4	6 & 8 p.m. (23rd).	S.	32	—
	Midt. (23rd).	S.	—	—	—	—	4 a.m. (24th).	S.W. by S.	4	2 a.m. (24th).	S.	36	—
Holy-head.	2 a.m. (23rd).	S.	10 a.m. (23rd).	S.	50	14	5 a.m. (24th).	W.S.W.	27	9 p.m. (23rd).	S. by E.	57	—
	6 a.m. (24th).	S.W. by W.	—	—	—	—	8 a.m. (24th).	W.	2	7 a.m. (24th).	N.W.b.W.	34	—
Armagh	4 p.m. (23rd).	S.	—	—	—	—	8 p.m. (23rd).	S.	4	6 p.m. (23rd).	S.	36	—
Valencia	8 p.m. (22nd).	S. by E.	9 a.m. (23rd).	S. by W.	44	9	9 p.m. (23rd).	W.N.W.	25	2 p.m. (23rd).	S.S.W.	50	—
Falmouth	9 a.m. (23rd).	S. by E.	—	—	—	—	11 p.m. (23rd).	S.S.W.	14	9 a.m. & 1 p.m. (23rd).	S. by E.	33	—
Yarmouth	11 p.m. (23rd).	S.	—	—	—	—	5 a.m. (24th).	S.	6	4 a.m. (24th).	S. by E.	38	—

No. 7. (CYCLONIC SYSTEM, No. 7.)

Stations.	VELOCITY. 30-40 Miles per Hour.		VELOCITY Exceeding 40 Miles per Hour.				VELOCITY Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	MAXIMUM VELOCITY.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Jan. 24-26, 1877.													
Sandwick.	3 a.m. (25th).	S.E. by S.	4 a.m. (25th).	S.E. by S.	56	6	Noon (25th).	S. by W.	9	7 a.m. (25th).	S.S.E.	65	—
	3 p.m. (25th).	S.W.	—	—	—	—	4 a.m. (26th).	W.	13	10 p.m. (25th). 3 a.m. (26th).	W.S.W. W.	38	— —
Aberdeen.	3 a.m. (25th).	S.S.E.	4 a.m. (25th).	S.S.E.	43	4	10 a.m. (25th).	S. by E.	7	6 and 7 a.m. (25th).	S.S.E.	46	—
Glasgow	5 a.m. (25th).	S. by E.	—	—	—	—	7 a.m. (25th).	S. by W.	2	6 a.m. (25th).	S. by E.	39	—
Alnwick Castle.	5 a.m. (25th).	S.	—	—	—	—	9 a.m. (25th).	S.	4	5 a.m. (25th).	S.	39	—
Seaham -	8 a.m. (25th).	S.	—	—	—	—	11 a.m. (25th).	S.W. by S.	3	9 a.m. (25th).	S.	32	—
Stonyhurst.	2 a.m. (25th).	S.	5 a.m. (25th).	S. by E.	42	4	9 a.m. (25th).	S.S.W.	7	5 a.m. (25th).	S. by E.	44	—
Holyhead.	7 p.m. (24th).	S.	10 p.m. (24th).	S. by E.	51	8	7 a.m. (25th).	S.W.	12	1 a.m. (25th).	S. by E.	55	—
	5 p.m. (25th).	W.	—	—	—	—	4 a.m. (26th).	W.N.W.	11	9 p.m. (25th).	W.N.W.	35	—
Armagh	9 p.m. (24th).	S. by E.	—	—	—	—	4 a.m. (25th).	S. by W.	7	1 a.m. (25th).	S. by E.	37	—
Valencia.	11 a.m. (24th).	S.W.	5 p.m. (24th).	S. by W.	45	9	3 a.m. (25th).	W. by N.	16	11 p.m. (24th).	S.W.	51	—
	7 a.m. (25th).	N.W. by W.	—	—	—	—	11 a.m. (25th).	W.N.W.	4	10 a.m. (25th).	W.N.W.	35	—
	1 p.m. (25th).	W.N.W.	—	—	—	—	6 p.m. (25th).	N.W.	5	2 p.m. (25th).	N.W.b.W.	36	—
Falmouth.	1 a.m. (25th).	S. by W.	—	—	—	—	10 a.m. (25th).	S.W.	9	8 a.m. (25th).	S.W. by S.	35	31 miles were recorded twice on the afternoon of 25th.
Yarmouth.	7 a.m. (25th).	S.	Noon (25th).	S. by E.	41	1	1 p.m. (25th).	S.	6	Noon (25th)	S. by E.	41	

No. 8. (CYCLONIC SYSTEM, No. 8.)

Stations.	VELOCITY. 30-40 Miles per Hour.		VELOCITY Exceeding 40 Miles per Hour.				VELOCITY Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	MAXIMUM VELOCITY.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Jan. 28-29 1877.													
Sandwick.	5 a.m. (28th).	S.S.E.	7 a.m. (28th). Midt. (28th).	S.E. by S. S.W.	52 48	3 20	10 p.m. (29th).	W.	41	8 a.m. (28th).	S.S.E.	56	—
Aberdeen	7 a.m. (28th).	S. by E.	8 a.m. (28th).	S.S.E.	43	1	10 a.m. (28th).	S.	3	8 a.m. (28th).	S.S.E.	43	—
Glasgow	6 a.m. (28th).	S. by E.	—	—	—	—	9 a.m. (28th).	S.W.	3	7 a.m. (28th).	S. by E.	38	Wind occasionally rose to 30 miles and a little above during the remainder of the 28th.

(*Table continued on next page.*)

No. 8 (*continued*). (Cyclonic System, No. 8.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Jan. 28-29 1877.													
Alnwick Castle.	7 a.m. (28th).	S. by W.	1 p.m. (28th).	S.W.byW.	40	1	3 p.m. (28th).	W. by N.	8	1 p.m. (28th).	S.W.byW.	40	—
	5 p.m. (28th).	S.W.byW.	9 p.m. (28th).	S.W.byW.	42	2	3 a.m. (29th).	W. by S.	10	9 p.m. (28th).	S.W.byW.	43	—
	7 a.m. (29th).	W. by S.	—	—	—	—	6 p.m. (29th).	W. by S.	11	9 a.m. (29th).	W.S.W.	38	—
Seaham -	7 a.m. (28th).	S. by W.	—	—	—	—	11 a.m. (28th).	S.W.	4	10 a.m. (28th).	S. by W.	35	—
Stonyhurst.	8 a.m. (28th).	S.	—	—	—	—	11 a.m. (28th).	S.W.	3	8 a.m. (28th).	S.	39	—
	1 a.m. (29th).	W. by S.	—	—	—	—	4 a.m. (29th).	W. by S.	3	3 a.m. (29th).	W. by S.	35	—
Holyhead.	2 a.m. (28th).	S. by E.	3 a.m. (28th).	S.	51	6	9 a.m. (28th).	W. by S.	7	7 a.m. (28th).	S. by W.	58	—
	11 a.m. (28th).	W.S.W.	Midt. (28th). 10 a.m. (29th). 1 p.m. (29th). 5 p.m. (29th).	W. by N. S.W. by S. W.S.W. W.	42 40 41 43	5 2 2 2	Wind did not fall below 30 miles, this depression being closely followed by Cyclonic System No. 9.		34	6 p.m. (29th).	W.	44	—
Armagh -	3 a.m. (28th).	S. by E.	—	—	—	—	7 a.m. (28tn).	W.S.W.	4	4 a.m. (28th).	S. by E.	39	—
Valencia	10 p.m. (27th).	S.	Midt. (27th). 7 a.m. (28th). Noon (28th). 6 p.m. (28th). 1 a.m. (29th). 8 a.m. (29th).	S. by W. W. by S. W. by N. W. by N. W.N.W. W. by S.	50 40 42 43 40 44	6 2 3 5 1 7	Wind did not fall below 30 miles per hour, this depression being closely followed by Cyclonic System No. 9.		45	3 a.m. (28th).	S.W. by S.	57	—
Falmouth.	7 a.m. (28th).	S.W. by S.	2 p.m. (28th).	W.	40	1	6 p.m. (28th).	W.	11	2 p.m. (28th).	W.	40	—
	8 p.m. (28th).	W. by S.	11 p.m. (28th).	W. by N.	44	2	4 a.m. (29th).	W.N.W.	8	11 p.m. (28th). Midt. (28th).	W. by N. W.N.W	44	—
	11 a.m. (29th).	W. by S.	—	—	—	—	8 p.m. (29th).	W. by S.	9	4, 5, and 6 p.m. (29th).	W. by S.	38	—

No. 9. (CYCLONIC SYSTEM, No. 9.)

Stations.	VELOCITY 30-40 Miles per Hour.		VELOCITY Exceeding 40 Miles per Hour.				VELOCITY Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	MAXIMUM VELOCITY.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Jan. 29-30 1877.													
Sandwick	10 a.m. (30th).	N.W.byN.	1 p.m. (30th).	N.W.byN.	43	4	7 p.m. (30th).	W.N.W.	9	2 and 3 p.m. (30th).	N.W.byN.	44	—
Aberdeen	9 a.m. (30th).	N.N.W.	—	—	—	—	6 p.m. (30th).	W.N.W.	9	3 p.m. (30th).	N.W.byW	37	—
Glasgow	—	—	11 p.m. (29th). 4 a.m. (30th).	S.W.byW. S.W. by S.	40 44	1 2	9 a.m. (30th).	W. by N.	10	5 a.m. (30th).	S.W. by S.	47	—
Alnwick Castle.	Midt. (29th).	W.S.W.	1 a.m. (30th). 8 a.m. (30th).	W. by S. W.S.W.	46 46	6 8	6 p.m. (30th).	N.W.	18	2 a.m. (30th).	S.W.byW.	51	—
Seaham	5 a.m. (30th).	S.S.W.	—	—	—	—	6 p.m. (30th).	N.W. byN.	13	4 p.m. (30th).	N.N.W.	38	—
Stonyhurst.	9 p.m. (29th).	W.S.W.	—	—	—	—	5 a.m. (30th).	S.W.	8	10 p.m. (29th).	W.S.W.	33	—
	7 a.m. (30th).	S.W.	8 a.m. (30th). 11 a.m. (30th).	W. N.W.b.W.	42 41	2 1	5 p.m. (30th).	N.W.byW	10	8 a.m. (30th). 9 a.m. (30th).	W. W.N.W	42	—
Holyhead	9 p.m. (29th).	S.W.byW.	1 a.m. (30th).	S.W. by S.	48	18	1 a.m. (31st).	N.W.byW	28	6 a.m. (30th). 8 a.m. (30th).	S.W. W.N.W	57	—
Armagh	2 a.m. (30th).	S.W.	3 a.m. (30th).	S.W. by S.	41	2	5 a.m. (30th).	W. by S.	3	3 a.m. (30th).	S.W. by S.	41	—
Valencia	7 p.m. (29th).	W. by S.	8 p.m. (29th).	W. by S.	48	10	8 a.m. (30th).	N.W.byN.	13	3 a.m. (30th).	W.S.W.	60	—
Falmouth	11 p.m. (29th).	W.S.W.	3 a.m. (30th). 11 a.m. (30th).	S.W.byW. N.W.b.W.	49 40	7 1	6 p.m. (30th).	W.N.W.	19	5 a.m. (30th).	S.W.byW.	53	—
Kew	4 a.m. (30th).	S.W.byW.	—	—	—	—	1 p.m. (30th).	N.W.byW	9	10 a.m. (30th).	W.S.W.	38	—
	2 p.m. (30th).	W.N.W.	—	—	—	—	6 p.m. (30th).	N.W.byW	4	2 p.m. (30th).	W.N.W.	37	—
Yarmouth	9 a.m. (30th).	S.W.byW.	11 a.m. (30th).	W. by N.	43	3	11 p.m. (30th).	N.W.byW	14	Noon (30th).	W.N.W.	47	—

No. 10. (Cyclonic System, No. 10.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Feb. 2–5, 1877.													
Sandwick.	Noon (2nd).	S.E.	—	—	—	—	4 p.m. (2nd).	S.E. by S.	4	Noon (2nd).	S.E.	36	—
	5 p.m. (2nd).	S.E. by S.	—	—	—	—	8 p.m. (2nd).	S.W. by S.	3	5 p.m. (2nd).	S.E. by S.	36	—
	—	—	10 p.m. (2nd).	W.S.W.	53	4	3 a.m. (3rd).	S.W.	5	11 p.m. (2nd).	W.S.W.	56	—
	9 a.m. (3rd).	S. by W.	—	—	—	—	11 a.m. (3rd).	S.S.W.	2	10 a.m. (3rd).	S. by W.	37	—
	2 p.m. (3rd).	S.W.	—	—	—	—	4 p.m. (3rd).	S.W. by S.	2	3 p.m. (3rd).	S.W. by W.	39	—
	9 p.m. (3rd).	S.W. by S.	3 a.m. (4th). 10 a.m. (4th).	S.W. by W. W. by. N.	43 45	5 1	Noon (4th).	W.N.W.	15	6 a.m. (4th).	W.	46	Wind occasionally exceeded 30 miles on afternoon of the 4th and morning of the 5th.
Aberdeen	5 p.m. (2nd).	S.S.E.	—	—	—	—	8 p.m. (2nd).	S.S.W.	3	6 p.m. (2nd).	S. by E.	36	Wind also slightly exceeded 30 miles at 9 and 10 p.m. 2nd and at 3 a.m. 3rd.
Glasgow.	3 p.m. (2nd).	S.	4 p.m. (2nd). 7 p.m. (2nd).	S. by W. S.W.	45 43	1 2	11 p.m. (2nd).	S.W.	8	4 p.m. (2nd). 7 p.m. (2nd).	S. by W. S.W.	45	—
	—	—	4 a.m. (3rd).	S.W. by S.	41	1	7 a.m. (3rd).	S.W. by S.	3	4 a.m. (3rd).	S.W. by S.	41	—
	9 a.m. (3rd).	S.W.	—	—	—	—	Noon (3rd).	S.W.	3	10 a.m. (3rd). 11 a.m. (3rd).	S.W. S.W. by W.	37	—
	3 a.m. (5th).	S.W. by S.	—	—	—	—	1 p.m. (5th).	W.S.W.	10	8 a.m. (5th).	S.W. by S.	37	—
Alnwick Castle.	5 p.m. (2nd).	S.W. by S.	6 p.m. (2nd).	W.S.W.	48	6	4 a.m. (3rd).	S.W. by S.	11	8 p.m. (2nd).	S.W. by W.	53	—
	9 a.m. (3rd).	S.S.W.	10 a.m. (3rd).	S.W.	46	4	3 p.m. (3rd).	W. by S.	6	Noon (3rd).	S.W. by W.	51	—
	3 a.m. (4th).	W. by S.	—	—	—	—	6 a.m. (4th).	W.	3	4 a.m. (4th).	W.S.W.	38	—
	7 a.m. (4th).	W.	—	—	—	—	11 a.m. (4th).	W. by S.	4	9 a.m. (4th).	W. by S.	34	—
	1 a.m. (5th).	S.W. by W.	5 a.m. (5th). 8 a.m. (5th).	S.W. by W. W.S.W.	42 48	1 2	10 a.m (5th).	W. by S.	9	8 a.m. (5th).	W.S.W.	49	—
	—	—	11 a.m. (5th).	W. by S.	41	1	2 p.m. (5th).	W.S.W.	3	11 a.m. (5th).	W. by S.	41	—
Seaham -	5 p.m. (2nd).	S.W. by S.	—	—	—	—	8 p.m. (2nd).	S.W.	3	6 p.m. (2nd).	S.W. by W.	34	The velocity of 30 miles was slightly exceeded at 9 and 11 a.m. and 2 p.m. on the 3rd.
Stonyhurst.	2 p.m. (2nd).	S.	—	—	—	—	7 p.m. (2nd).	S.W. by W.	5	3 p.m. (2nd).	S.	35	Wind again rose to 34 miles at 11 a.m. 3rd.

(*Table continued on next page.*)

No. 10 (*continued*). (Cyclonic System, No. 10.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Feb. 2-5, 1877.													
Holyhead.	8 a.m. (2nd).	S. by W.	Noon (2nd).	S. by W.	42	6	1 a.m. (3rd).	S.W.	17	2 p.m. (2nd).	S.S.W.	46	—
	2 a.m. (3rd).	S.W. by S.	3 a.m. (3rd).	S.W.	Clock stopped between 10 a.m. 3rd and Noon 4th. At 10 a.m. 3rd velocity was 40 miles, and at 1 p.m. 4th it was 25 miles per hour. Velocity was again a little above 30 miles at 10 and 11 a.m. and 1 p.m. on 5th.								
Armagh	2 p.m. (2nd).	S.W. by S.	—	—	—	—	6 p.m. (2nd).	W.S.W.	4	4 p.m. (2nd).	S.W.	37	—
Valencia.	7 a.m. (2nd).	S. by W.	9 a.m. (2nd).	S.S.W.	48	6	5 p.m. (2nd).	W.	10	Noon (2nd). 1 p.m. (2nd).	W.S.W. W. by S.	54	—
	9 p.m. (2nd).	W. by S.	11 p.m. (2nd).	S.W.byW.	45	6	10 a.m. (3rd).	W. by N.	13	11 p.m. (2nd).	S.W.byW.	50	Wind rose to 34 miles at 6 p.m. 3rd.
Falmouth.	11 a.m. (2nd).	S.W. by S.	1 p.m. (2nd). 4 p.m. (2nd).	S.W. by S. W. by N.	41 41	1 1	5 p.m. (2nd).	W.	6	1 p.m. (2nd). 4 p.m. (2nd).	S.W. by S. W. by N.	41	—
	Noon (3rd).	S.W. by S.	—	—	—	—	5 p.m. (3rd).	S.W. by W.	5	1 p.m. (3rd).	S.W.	34	—

No. 11. (Cyclonic System, No. 13.)

Stations.	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.	Total No. of Hours the Vel. above 30 Mls.	Hour.	Direction of Wind.	Velocity.	Remarks.
Feb. 19-21, 1877.													
Sandwick	11 p.m. (20th).	N.W.byN.	Midt. (20th).	N.N.W.	43	4	8 a.m. (21st).	N. by W.	9	3 a.m. (21st).	N.N.W.	46	—
Seaham	2 p.m. (21st).	N.	3 p.m. (21st).	N.	42	2	6 p.m. (21st).	N.N.E.	4	3 p.m. (21st).	N.	42	—
	—	—	7 p.m. (21st).	N.	42	1	9 p.m. (21st).	N.	2	7 p.m. (21st).	N.	42	—
Holyhead	6 p.m. (19th).	S.W.	8 p.m. (19th).	S.W.byW.	53	40	7 p.m. (21st).	N. by E.	49	3 a.m. (20th). 4 a.m. (20th).	N.W. N.W.byN.	82	—
Valencia	4 p.m. (19th).	W.byN.	6 p.m. (19th). Midt. (19th). 2 a.m. (20th).	N.W.byW N.W.byN. N.W. byN.	43 44 41	2 1 3	2 a.m. (21st).	N. by E.	34	Midt. (19th).	N.W.byN.	44	Instrument was not in proper action between 11 a.m. and 2 p.m. 20th, but wind probably slightly exceeded 30 miles per hour during the interval.
Falmouth	9 p.m. (19th).	W. by S.	10 p.m. (19th). 8 p.m. (20th).	W. by N. N.W.	46 42	15 5	1 p.m. (21st).	N. by W.	40	7 a.m. (20th).	N.W.b.W.	53	Wind also slightly exceeded 30 miles at 2, 3, and 4 p.m. on the 21st.
Kew	7 a.m. (20th).	W.N.W.	—	—	—	—	3 p.m. (20th).	N.W.	8	Noon (20th).	N.W.byN.	37	—

No. 12. (CYCLONIC SYSTEM, No. 14.)

Stations.	VELOCITY 30-40 Miles per Hour.		VELOCITY Exceeding 40 miles per Hour.				VELOCITY Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	MAXIMUM VELOCITY.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Feb. 23-28, 1877.													
Sandwick.	4 p.m. (23rd).	W.by S.	7 p.m. (23rd). 1 a.m. (24th). Noon (24th).	W. by S. W.N.W. W. by N.	41 40 42	1 2 3	5 p.m. (24th).	N.W. by N.	25	2 p.m. (24th).	W.N.W.	43	—
	6 p.m. (24th).	W.N.W.	8 p.m. (24th).	W.N.W.	42	3	7 p.m. (25th).	N.N.W.	25	10 p.m. (24th).	W.N.W.	43	—
	Midnt. (25th).	N.	2 a.m. (26th). 10 a.m. (26th).	N. N.W. by N.	40 46	1 36	7 a.m. (28th).	N.W. by N.	55	10 a.m. (27th).	N.W. by N.	55	—
Aberdeen.	3 p.m. (24th).	W.N.W.	—	—	—	—	6 p.m. (24th).	W. by N.	3	4 p.m. (24th).	W.	34	—
	9 a.m. (25th).	W. by N.	11 a.m. (25th).	NW.b.W.	43	1	2 p.m. (25th).	W.N.W.	5	11 a.m. (25th).	N.W.b.W.	43	—
	1 p m. (26th).	N.W. by N.	—	—	—	—	8 p m. (26th).	N.W.b.W.	7	4 p.m. (26th).	N.W.	37	—
	3 p.m. (27th).	N.W.	6 p.m. (27th).	N.W.b.W.	40	6	3 a.m. (28th).	N.W.b.W.	12	11 p.m. (27th).	N.W.b.W.	42	—
Glasgow	—	—	2 p m. (24th).	W. by N.	40	3	6 p.m. (24th).	W.N.W.	4	2 and 3 p.m. (24th). 4 p.m. (24th).	W. by N. W.N.W.	40	—
Alnwick Castle.	1 p.m. (24th).	W.N.W.	—	—	—	—	4 p.m. (24th).	W.N.W.	3	2 p.m. (24th).	W. by N.	36	—
	9 a.m. (25th).	W.N.W.	—	—	—	—	4 p.m. (25th).	N.W.b.W.	7	9 a.m. (25th). 1 p.m. (25th).	W.N.W. N.W.b.W.	38	Wind occasionally exceeded 30 miles on the afternoon of 27th and early morning of the 28th.
Seaham	11 a.m. (25th).	N.W.b.W.	—	—	—	—	3 p.m. (25th).	N.W.b.W.	4	11 a.m. (25th).	N.W.b.W.	33	
	8 a.m. (26th).	N.	11 a.m. (26th).	N.	42	2	2 p.m. (26th).	N.	6	Noon (26th).	N.	43	
Holyhead.	3 a.m. (24th).	W. by N.	—	—	—	—	11 a.m. (24th).	W. by N.	8	8 a.m. (24th).	W.N.W.	33	—
	6 a.m. (25th).	W. by S.	—	—	—	—	11 a.m. (25th).	W.	5	9 a.m. (25th).	W.	37	—
	7 p.m. (25th).	W. by S.	—	—	—	—	Midnt. (25th).	W. by S.	5	8 p.m. (25th).	W. by S.	36	—
	2 a.m. (26th).	W.	5 a.m. (26th).	N.E. by N.	45	4	Noon (26th).	N. by E.	10	5 a.m. (26th).	N.E. by N.	47	—
	6 p.m. (26th).	N.W.b.W.	—	—	—	—	9 p.m. (26th).	N.N.W.	3	7 p.m. (26th).	N.W. by N.	35	—
	4 a.m. (27th).	W. by N.	Noon (27th). 3 p.m. (27th).	N.N.W. N.W. by N.	40 41	1 1	Noon (28th).	N.E.	32	3 p.m. (27th).	N.W. by N.	41	—
Valencia.	1 p.m. (25th).	W. by N.	—	—	—	—	6 p.m. (25th).	W. by N.	5	5 p.m. (25th).	W.	32	—
	7 p.m. (25th).	W.	—	—	—	—	7 a.m. (26th).	N.W.	12	10 p.m. (25th). Midnt. (25th).	W. by S. W.N.W.	39	—
Falmouth.	8 a.m. (25th).	W.N.W.	1 p.m. (25th).	W. by N.	40	2	11 p.m. (25th).	W. by S.	15	1 p.m. (25th). 2 p.m. (25th).	W. by N. W.N.W.	40	—
	1 a.m. (26th).	W. by S.	2 a.m. (26th).	W.	41	7	Noon (26th).	N.N.W.	11	8 a.m. (26th).	W.N.W.	44	—
Yarmouth.	1 p.m. (25th).	W.N.W.	—	—	—	—	3 p.m. (25th).	W.N.W.	2	2 p.m. (25th).	N.W.b.W.	35	Wind again rose to 30 miles at 7 and 8 a.m. 26th.

No. 13. (CYCLONIC SYSTEM, No. 15.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Mar. 6-8, 1877.													
Sandwick.	10 a.m. (6th).	W. by N.	—	—	—	—	1 p.m. (6th).	N.W.byN.	3	Noon (6th).	N.W.b.W.	34	—
	3 p.m. (6th).	N.W. by N.	11 p.m. (6th).	N. by W.	42	2	7 a.m. (7th).	N. by W.	16	11 p.m. (6th). 4 a.m. (7th).	N. by W.	43	—
			2 a.m. (7th).	N. by W.	40	1							
			4 a.m. (7th).	N. by W.	42	2							
Aberdeen	11 p.m. (6th).	N.W.	—	—	—	—	1 a.m. (7th).	N.N.W.	2	Midt. (6th).	N.W.	33	—
Stonyhurst.	8 a.m. (7th).	N.W.byN.	2 p.m. (7th).	N. by E.	40	2	6 p.m. (7th).	N.N.E.	10	2 and 3 p.m. (7th).	N. by E.	40	—
Holyhead	10 p.m. (6th).	N.W.b.W.	1 a.m. (7th).	N.W.byN.	53	21	Midt. (7th).	N.N.E.	26	9 a.m. (7th).	N. by W.	62	—
Falmouth	6 a.m. (7th).	N.W.	7 a.m. (7th).	N.W.byN.	44	1	2 a.m. (8th).	N.N.W.	20	7 p.m. (7th).	N.N.W.	49	—
			9 a.m. (7th).	N.N.W.	44	4							
			3 p.m. (7th).	N.W.byN.	41	1							
			6 p.m. (7th).	N.N.W.	44	5							
Yarmouth	5 p.m. (7th).	N.E. by N.	6 p.m. (7th).	N.E.	43	6	3 a.m. (8th).	N. by E.	10	7 and 8 p.m. (7th).	N.E.	47	—

No. 14. (CYCLONIC SYSTEM, No. 16.)

Mar. 12-16, 1877.													
Sandwick.	1 a.m. (12th).	S. by W.	—	—	—	—	3 a.m. (12th).	S.W.	2	1 a.m. (12th).	S. by W.	34	—
	—	—	4 a.m. (12th).	W.	46	32	4 p.m. (13th).	W.N.W.	36	10 a.m. (13th).	W.N.W.	57	—
	11 p.m. (13th).	W.S.W.	1 a.m. (14th).	W. by S.	50	25	2 a.m. (15th).	W. by N.	27	11 a.m. (14th).	W.	60	—
	3 a.m. (15th).	W. by N.	—	—	—	—	7 a.m. (15th).	W.	4	4 a.m. (15th).	W.	35	Wind again rose to 31 miles at 8 a.m. and 36 miles at 10 a.m. on 15th.
Aberdeen.	Noon (12th).	W. by N.	—	—	—	—	6 p.m. (12th).	W.	6	2 p.m. (12th).	W. by N.	33	—
	10 a.m. (13th).	W.N.W.	—	—	—	—	4 p.m. (13th).	N.W.b.W.	6	10 a.m (13th).	W.N.W.	37	—
	6 a.m. (14th).	W. by N.	—	—	—	—	9 a.m. (14th).	W.	3	8 a.m. (14th).	W.N.W.	33	—
	Noon (14th).	W.N.W.	—	—	—	—	5 p.m. (14th).	W.	5	1 p.m. (14th).	W.	37	—

(*Table continued on next page.*)

No. 14 (*continued*). (Cyclonic System, No. 16.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Mar. 12-16, 1877.													
Glasgow.	3 a.m. (12th).	S.W. by S.	—	—	—	—	6 a.m. (12th).	S.W.byW.	3	3 a.m. (12th).	S.W. by S.	39	—
	10 a.m. (12th).	W. by N.	11 a.m. (12th).	W. by N.	40	3	6 p.m. (12th).	W.N.W.	8	Noon (12th).	W.N.W.	41	—
	10 a.m. (14th).	W.	—	—	—	—	6 p.m. (14th).	W. by N.	8	2 p.m. (14th).	W.N.W.	39	—
Alnwick Castle.	4 a.m. (12th).	S.W.byW.	5 a.m. (12th).	W.S.W.	44	3	10 a.m. (12th).	W.	6	5 a.m. (12th).	W.S.W.	47	—
	11 a.m. (12th).	W.	—	—	—	—	6 p.m. (12th).	W. by N.	7	2 p.m. (12th). 4 p.m. (12th)	W. by N. W.N.W.	35	Wind also slightly exceeded 30 miles at a few hours on the 13th.
	3 a.m. (14th).	W. by S.	11 a.m. (14th).	W. by N.	41	1	5 p.m. (14th).	W.N.W.	14	11 a.m. (14th).	W. by N.	41	—
	—	—	7 a.m. (15th).	W. by S.	40	1	1 p.m. (15th).	W.	6	7 a.m. (15th).	W. by S.	40	—
Stonyhurst.	Noon (12th).	W. by S.	—	—	—	—	10 p.m. (12th).	W. by N.	10	2 p.m. (12th).	W.	38	—
	Noon (13th).	W. by N.	—	—	—	—	3 p.m. (13th).	W. by N.	3	Noon (13th).	W. by N.	34	—
	5 a.m. (14th).	W. by S.	1 p.m. (14th).	W. by N.	40	1	5 p.m. (14th).	W.	12	1 p.m. (14th).	W. by N.	40	—
Holyhead.	6 a.m. (12th).	S.W.	—	—	—	—	11 a.m. (12th).	W.	5	7 a.m. (12th).	S.W.byW.	33	—
	3 p.m. (12th).	W. by N.	10 p.m. (12th).	W.N.W.	41	4	6 a.m. (13th).	N.W.b.W.	15	1 a.m. (13th).	W.N.W.	43	Wind again slightly exceeded 30 miles at 1 and 2 p.m. 13th, also at a few hours on 14th and 15th.
Valencia	11 p.m. (15th).	W. by N.	—	—	—	—	5 a.m. (16th).	W.N.W.	6	Midt. (15th).	W.	33	—
Falmouth.	11 a.m. (13th).	W.N.W.	—	—	—	—	6 p.m. (13th).	W. by N.	7	1 p.m. (13th). 4 p.m. (13th).	W. by N. W.N.W.	35	—
	11 a.m. (14th).	W. by N.	—	—	—	—	7 p.m. (14th).	W. by N.	8	11 a.m. & 5 p.m. (14th).	W. by N.	34	—

No. 15. (CYCLONIC SYSTEM, No. 17.)

Stations.	VELOCITY 30-40 Miles per Hour.		VELOCITY Exceeding 40 Miles per Hour.				VELOCITY Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	MAXIMUM VELOCITY.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vol.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Mar. 24-27, 1877.													
Sandwick.	2 p.m. (26th).	E. by N.	—	—	—	—	6 p.m. (26th).	E. by N.	4	2 and 5 p.m. (26th).	E. by N.	33	—
	10 p.m. (26th).	E. by N.	—	—	—	—	8 a.m. (27th).	E.N.E.	10	2 a.m. (27th).	E. by N.	33	Wind again rose to 30 miles at 9 and 10 a.m. 27th.
Aberdeen.	9 a.m. (24th).	S.E. by S.	—	—	—	—	7 p.m. (24th).	S.E.	10	11 a.m. and Noon (24th).	S.E. by S.	34	—
	1 a.m. (25th).	E. by S.	—	—	—	—	6 p.m. (25th).	E. by N.	17	3 a.m. (25th) 11 a.m. (25th).	E. E. by N.	39	—
	8 p.m. (25th).	E.	9 p.m. (26th).	E.	40	1	4 a.m. (27th).	E.	32	9 p.m. (26th).	E.	40	—
Glasgow -	4 a.m. (25th).	E.N.E.	—	—	—	—	9 p.m. (25th).	N.E. by E.	17	1 p.m. (25th).	N.E.	39	Wind again rose to 33 miles at 10 p.m. 25th.
Alnwick Castle.	5 a.m. (25th).	E.	—	—	—	—	9 a.m. (25th).	E.N.E.	4	8 a.m. (25th).	E.N.E.	35	—
	11 a.m. (25th).	E. by N.	—	—	—	—	2 a.m. (26th).	E. by N.	15	9 p.m. (25th).	E.	34	Wind also exceeded 30 miles at 3 and 4 a.m. 26th.
Seaham -	7 a.m. (25th).	E.N.E.	—	—	—	—	3 p.m. (25th).	E. by N.	8	Noon (25th).	E. by N.	33	—
Holyhead.	5 p.m. (24th).	S.E.	7 p.m. (24th). 10 a.m. (25th).	E. by S. E.	48 45	14 2	2 p.m. (25th).	E.	21	Midnt. (24th).	E.	57	—
	5 p.m. (25th).	E.N.E.	—	—	—	—	11 p.m. (25th).	E.N.E.	6	6 and 7 p.m. (25th).	E.N.E.	34	—
Valencia-	7 a.m. (25th).	N. by E.	—	—	—	—	5 p.m. (25th).	N.N.E.	10	8 a.m. (25th). 3 p.m. (25th).	N. by E. N.N.E.	39	—
Falmouth	11 a.m. (24th).	S. by W.	—	—	—	—	4 p.m. (24th).	S.W. by S.	5	11 a.m. (24th).	S. by W.	32	—
Yarmouth	Midnt. (24th).	S.E. by S.	—	—	—	—	9 a.m. (25th).	S.E. by S.	9	3 a.m. (25th).	S.E.	36	—

TABLE OF ANTICYCLONIC SYSTEMS—JANUARY TO FEBRUARY, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. I. January 10-15.	No. II. January 19-25.	No. III. January 26-February 14.
Form	Oval	Varying; somewhat circular becoming elongated.	Varying; sometimes oval, at other times circular, and sometimes unknown.
Size	Large	Large	Large
Height	Moderate; max. readings 30·5 ins. on 13th and 14th.	Moderate; max. readings 30·6 ins. on 21st and 22nd.	Moderate; max. readings 30·6 ins. on 29th.
Where first Observed	Over Scandinavia	Over France	Over the Peninsula and the Bay of Biscay.
Direction of Motion	Easterly	Northerly and then easterly and north-easterly.	Almost stationary, but for a short time extended an arm over Scandinavia.
Rate of Motion	Very slow	Slow	Very slow
Regions passed over	North-western Europe	South England, France and Germany	France, southern England, and Scandinavia.
Termination	Passed off over Lapland	Disappeared over Russia	Disappeared over the Bay of Biscay
Accompanying Wind	Easterly over Great Britain; North-easterly to Easterly in the Baltic; Easterly to South-easterly in Denmark and Scandinavia.	Easterly to South-easterly in France and Southerly to South-westerly in the United Kingdom.	Generally North-westerly to Westerly, moderate to light.
,, **Weather**	Cold in Norway and Sweden with snow in the Baltic.	For the most part dry and foggy, but temperature not very low.	Mild, but rather misty and foggy, with slight rain.
REMARKS	This system first showed itself over the North Sea and the northern portion of Great Britain. It developed, however, as it passed eastward, and the highest readings (higher than those quoted above) were observed over Russia on the 14th, when the centre had passed beyond the limits enclosed by our daily chart. An area of high pressure appeared over the Peninsula on the 13th, and moving northwards, it became united with this system on the 16th.	This anticyclone became well developed within our area, but was eventually split into two parts by a depression, No. VII., on the 25th, when one portion disappeared over Russia, while the other reappeared to the southward of Great Britain.	This system remained very persistently over France and the Peninsula, the centre occasionally advancing northwards as on the 5th, and again retreating over Spain. It was at last dispersed by a series of depressions which passed over the northern portion of the United Kingdom between the 11th and 15th.

Table of Anticyclonic Systems—February to March, 1877.

No. IV. **February 21-25.**	No. V. **February 27-March 3.**	No. VI. **March 12-15.**
Unknown	Uncertain, but probably oval	Unknown.
Large	Large	Large.
Small; max. readings 30·3 ins. on 22nd and 25th	Moderate; max. readings 30·4 ins. on 28th and 1st	Small; max. readings 30·4 ins. on 14th.
Off west coast of Ireland	Over Ireland and the Channel	Over France.
Easterly and then southerly	Easterly, but extending itself over Scandinavia	Almost stationary, but extending itself over England and Ireland.
Very slow	Very slow	Very slow.
The United Kingdom, and France	The whole of our area	Ireland, England, and France.
Passed away to the south	Travelled towards Germany	Dispersed.
Strong North-westerly and Northerly	Northerly at first, becoming Southerly as the system moved away over France.	Generally North-westerly, moderate to strong.
Cold and showery	Generally warm and dull. Temperature rose rapidly as the system moved away.	Cloudy or overcast.
Only a very small portion of this apparently large system came within our area. The centre was over the ocean to the west or south-west of Great Britain and moved away under the influence of the large depression, No. XIV, which reached us on the 24th.	This system came upon us from the westward, but stretched a ridge of high pressure northwards over Scandinavia; it eventually disappeared over central Europe.	Only a portion of this system came within the limits of our area, and therefore but little can be said as to its dimensions, &c. The highest readings were observed over the Peninsula on the 14th.

NOTES to accompany the TABLE of ANTICYCLONIC SYSTEMS, January to March 1877.

January 1st–9th.—During this period the barometer was highest over southern and central Europe, a belt of low pressure covering the whole of the western and northern portions of the Continent.

January 16th–18th.—An area of relatively high pressure, which had first shown itself over the Peninsula, now became united to the northern area, and pressure was consequently very uniform over the whole of central Europe.

February 15th–20th.—During the first part of this interval the highest pressures were over south-eastern Europe, with another small patch of relatively high readings in the extreme north; but on the 17th the highest barometers were once more found over the Bay of Biscay, although they soon began to fall again on the approach of depression No. XIII.

March 3rd–11th.—Until the 9th the highest pressures remained to the south-west of the British Isles, but on the 10th and 11th an area of high readings existed over northern Germany.

March 16th–31st.—During nearly the whole of this interval pressure was low over Europe generally, the highest readings being found, as a rule, in the south-east; but on the 30th a fresh area of high pressure began to show itself once more over the Bay of Biscay, and at the close of the month the highest barometers were found in that region.

SECTION III.

Remarks for January, 1877.

(*Tables A. to C., January, with Monthly Wind and Weather Charts.*)

Wind.—The wind at the commencement of the month was Northerly over the greater part of the country, but Westerly in the south of England. On the 2nd it veered, and for two or three days Easterly winds prevailed on all except the Channel coasts, where the direction was Southerly; the veering, however, continued, and on the 6th Southerly and South-westerly winds had become general. On the 9th the direction became rather variable, Westerly winds blowing in the south, and chiefly Northerly and North-easterly winds in the north; but on the 10th East again became the prevailing direction, and continued so throughout the following day. The wind then backed through North to South once more, and from the 13th to the end of the month Southerly and Westerly winds prevailed all over the kingdom, being governed by a series of depressions which travelled to the eastward north of Scotland. Upon the whole, therefore, the Southerly winds largely predominated; in the Shetlands Northerly and North-easterly winds were somewhat frequent, but at the mainland stations (with the exception of Ardrossan) the percentage of wind from that quarter was very small.

Pressure.—The distribution of mean pressure was nearly normal, the highest readings occurring in the south-east and the lowest in the north-west, a difference of rather more than three and a half tenths existing between the two districts. The maximum readings occurred on the 21st and 22nd, in connexion with an anticyclone whose centre was then in the neighbourhood of our south-eastern counties, and the highest reading recorded was 30·681 inches at Kew. The minima were registered at the English stations on the 1st, during the passage of depression No. I.; and at the Irish and Scotch stations during the night of the 6th and 7th, when a large disturbance was travelling along the north-western coasts; the lowest reading recorded was 28·348 inches at Valencia. The range of pressure exceeded 2 inches at Valencia, but was only a little more than 1·7 inches at Aberdeen.

Movements of Depressions.—In one or two cases these followed an easterly course across our Islands, but in the majority of instances their path lay to the northward of Scotland, where they passed in a north-easterly direction towards Norway.

A high-pressure area maintained itself with great persistency over western Europe during a considerable portion of the month.

Temperature.—The mean temperature varied from 49° at Scilly to 37° over northern Scotland, and whilst it was about the average over the latter country and Ireland, it was considerably above it over England and Wales. The maxima were recorded most generally on the 19th, but the minima were observed at very irregular dates; the latter were nowhere very low, except in the extreme north, where temperatures below 20° occurred on the 3rd, with an Easterly wind. The range of temperature was generally small; at Glenalmond it was nearly 40°, but that was exceptional, and at the majority of stations it did not reach 30°, and at Scilly amounted to only 16°.

Vapour Tension was greatest in the south-west and least in the north and east, while *Relative Humidity* was highest in the south-east.

Rainfall.—The month was decidedly a wet one, and although the fall of rain amounted to about the average in the north of Scotland, it considerably exceeded it in all other parts of the kingdom, and at Dartmoor amounted to nearly 17½ inches. Falls exceeding 1 inch in 24 hours were registered at several stations, the most general date on which the maximum was registered being the 3rd.

TABLE A., JANUARY.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of JANUARY 1877, together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).						TEMPERATURE In the Shade (In Degrees Fahrenheit).						HYGROMETRIC VALUES.		RAINFALL (In English Inches).
	Mean for the Month.	Extremes.				Range.	Mean for the Month.	Extremes.				Range.	Tension of Vapour (In English Inches.)	Relative Humidity (Saturation = 100.)	
		Minimum.		Maximum.				Minimum.		Maximum.					
		Reading.	Date.	Reading.	Date.			Reading.	Date.	Reading.	Date.				
Valencia - -	ins. 29·658	ins. 28·348	D. 6th, H. 8 p.m.	ins. 30·440	D. 21st, H. 8 p.m. 9 p.m.	ins. 2·092	46°·6	33°·4	D. 2nd, H. 3 a.m.	53°·4	D. 16th, H. 1 p.m.	20°·0	in. ·260	% 83	ins. 8·955
Armagh - -	·646	·504	6th, Midt.	·478	21st, Midt.	1·974	41·2	31·2	13th, 3 a.m.	51·3	16th, 3 p.m.	20·1	·229	89	5·184
Glasgow - -	·635	·637	7th, 2 a.m.	·485	22nd, 10 a.m.	1·848	38·2	24·9	3rd, 1 a.m.	50·4	19th, 1 p.m. 2 p.m.	25·5	·201	88	6·785
Aberdeen - -	·639	·741	7th, 5 a.m.	·468	22nd, 10 a.m.	1·727	37·8	21·9	3rd, 8 a.m.	47·4	19th, 4 p.m.	25·5	·190	84	3·585
Falmouth - -	·832	·695	1st, 6 a.m.	·614	21st, 11 a.m. Noon.	1·919	47·5	37·7	13th, 4 a.m.	54·4	3rd, 10 a.m.	16·7	·281	87	8·965
Stonyhurst -	·732	·726	1st, 10 a.m.	·566	22nd, 10 a.m.	1·840	40·5	28·9	2nd, 9 a.m.	53·9	19th, Noon	25·0	·217	87	7·763
Kew -	29·850	28·735	1st, 9 a.m.	30·681	21st, 10 a.m.	1·946	43·3	27·1	21st, 8 a.m.	55·5	19th, 2 p.m.	28·4	·242	86	4·885

TABLE B., JANUARY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at

The values are not

(The Stations are grouped in Districts, and then arranged in order of

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	AIR TEMPERATURE.									
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Means of			Absolute Extremes.			
						Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°	°	°		°	
0. SCOTLAND, N. -	Sandwick Manse (Orkneys) -	29·560	36·7	36·6	36·7	34·0	41·1	37·6	27·2	2nd, 3rd, 11th	48·0	25th
1. SCOTLAND, E. -	Glenalmond, - - -	29·655	34·2	33·6	33·9	29·6	40·3	35·0	10·5	3rd	49·9	19th
2. ENGLAND, N.E. -	Seaham - - -	29·712	40·3	39·0	39·7	34·4	45·9	40·2	25·8	2nd, 3rd	57·7	19th
	Durham* - - -	29·698	38·7	37·9	38·3	33·6	44·4	39·0	24·3	2nd	55·9	19th
	Hull - - - -	29·770	40·7	40·2	40·5	35·9	45·7	40·8	30·0	13th	56·0	19th
	Kelstern 𝔐 - - -	29·788	38·5	38·4	38·5	34·3	44·7	39·5	27·8	27th	54·7	19th
3. ENGLAND, E. -	Hillington 𝔐 - - -	29·808	40·2	39·9	40·1	34·9	46·4	40·7	25·2	27th	56·1	19th
	Audley End 𝔐 - -	29·851	41·1	40·6	40·9	35·4	47·4	41·4	25·8	23rd	56·0	19th
	Chigwell Row - - -	29·878	41·9	42·6	42·3	37·3	48·0	42·7	29·5	21st	55·0	19th
4. MIDLAND COUNTIES.	Wakefield 𝔐 - - -	29·764	41·2	40·6	40·9	36·1	46·9	41·5	29·2	12th, 23rd	58·6	19th
	Buxton 𝔐 - - -	29·789	38·1	38·4	38·3	33·1	43·8	38·5	21·0	12th	52·3	19th
	Cheadle 𝔐 - - -	29·778	38·8	39·8	39·3	34·8	44·8	39·8	29·0	12th	52·7	19th
	Leicester - - -	29·797	41·6	41·4	41·5	37·3	47·4	42·4	29·9	12th	56·8	19th
	Uppingham - - -	29·801	39·8	40·0	39·9	35·7	46·1	40·9	29·0	12th	54·3	19th
	Oscott - - - -	29·784	39·7	40·5	40·1	36·2	46·8	41·5	29·2	12th	55·3	19th
	Churchstoke 𝔐 - -	29·783	40·6	40·7	40·7	35·2	46·8	41·0	28·0	12th	54·7	19th
	Hereford 𝔐 - - -	29·786	41·1	41·8	41·5	36·6	48·5	42·6	28·1	12th	55·4	19th
5. ENGLAND, S. -	Marlborough 𝔐 - -	29·845	41·3	40·9	41·1	36·5	47·9	42·2	28·8	12th	53·3	19th
	Strathfield Turgiss 𝔐 -	29·854	42·2	41·4	41·8	36·4	48·7	42·6	26·7	21st	54·4	19th
	Ramsgate 𝔐 - - -	29·886	43·7	44·2	44·0	39·0	48·8	43·9	30·0	27th	55·6	9th
	Folkestone - - -	29·876	44·1	43·8	44·0	39·0	48·6	43·8	31·2	27th	54·6	1st
	Hastings - - -	29·885	44·1	44·4	44·3	39·7	48·5	44·1	31·1	27th	54·8	1st
6. SCOTLAND, W. -	——	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND, N.W. -	Hawes 𝔐 - - -	29·745	38·1	37·7	37·9	33·7	42·7	38·2	21·0	2nd	52·0	19th
	Prestwich‡ - - -	—	—	—	—	—	—	—	—	—	—	—
	Llandudno 𝔐 - -	29·723	43·6	43·4	43·5	38·5	49·2	43·9	31·0	12th	56·2	19th
8. ENGLAND, S.W. -	Caermarthen 𝔐 - -	29·781	43·6	43·4	43·5	38·8	50·4	44·6	30·8	12th	54·5	27th
	Dartmoor 𝔐 - - -	29·844	41·0	40·6	40·8	36·3	45·3	40·8	31·0	13th	49·6	19th
	Babbacombe 𝔐 - -	29·841	45·0	44·4	44·7	39·6	50·4	45·0	32·8	13th	55·7	27th
9. IRELAND, N. -	Markree Castle - -	29·613	39·4	40·4	39·9	34·4	46·6	40·5	23·9	2nd	53·4	16th
10. IRELAND, S. -	Dublin - - -	29·697	43·1	43·5	43·3	38·4	49·0	43·7	30·9	13th	54·1	16th
	Parsonstown - - -	29·676	40·4	40·7	40·6	35·3	48·2	41·8	25·3	2nd	53·3	16th
CHANNEL - -	Jersey (St. Aubin's) - -	29·942	47·9	47·2	47·6	43·4	51·3	47·4	35·2	22nd	57·2	1st

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* At Durham the observations were taken at 10 a.m. and 10 p.m. each day. † Wind force not recorded; it is probable that sometimes when there

NOTE.—The stations marked 𝔐 belong to the Royal Meteorological Society.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of JANUARY 1877.
corrected for Diurnal Range.

Latitude, beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10).			RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	%	%	%				ins.	ins.																	
·195	·196	·196	90	91	91	6·9	6·7	6·8	3·430	·870	19th	24	5	2	0	2	11	6	3	5	5	9	9	8	8	4	11
·181	·178	·180	90	91	91	7·6	7·3	7·5	8·990	1·000	1st	26	14	1	0	1	15	1	6	6	7	3	5	18	7	2	8
·225	·220	·223	91	93	92	6·2	6·1	6·2	3·060	·890	3rd	18	0	0	0	6	12	0	2	3	6	0	21	12	9	5	4
·213	·212	·213	89	91	90	6·9	6·8	6·9	6·182	1·390	3rd	21	3	1	0	3	15	1	2	4	4	2	24	9	8	8	1
·226	·226	·226	89	91	90	6·5	5·1	5·8	2·470	·770	3rd	22	1	0	0	2	8	2	0	2	2	4	4	28	3	11	8
·228	·225	·227	96	95	95	6·4	6·3	6·4	3·981	1·237	3rd	21	2	1	0	2	9	1	1	4	2	2	13	17	10	7	6
·232	·235	·234	92	93	92	7·5	6·1	6·8	3·266	1·050	3rd	23	0	1	1	2	13	4	3	1	6	4	7	23	6	7	5
·247	·239	·243	93	92	93	7·6	5·0	6·3	3·620	·470	10th	27	3	0	0	2	12	0	0	3	2	1	4	23	7	10	12
·255	·249	·252	96	91	94	7·9	6·8	7·4	4·700	·630	8th	20	3	3	0	0	13	1	5	7	4	6	14	17	4	4	1
·240	·232	·236	91	90	91	6·5	—	—	3·490	1·060	3rd	22	0	0	0	0	0	0	4	2	5	6	19	10	14	2	0†
·205	·204	·205	87	87	87	8·0	8·8	8·4	7·823	1·520	29th	24	10	0	1	0	20	2	0	3	4	3	2	18	15	13	4
·216	·217	·217	92	89	91	8·1	8·1	8·1	5·010	1·200	3rd	25	7	2	0	1	20	3	3	9	0	6	12	14	3	8	7
·233	·226	·230	90	88	89	7·3	6·3	6·8	2·990	·780	3rd	22	4	0	0	1	13	4	2	2	5	5	19	14	5	1	9
·230	·223	·227	92	89	90	7·2	6·5	6·9	3·369	1·360	3rd	23	1	1	0	1	13	3	1	4	1	2	16	18	8	6	6
·231	·230	·231	92	90	91	8·4	7·0	7·7	3·270	1·120	3rd	21	5	1	0	2	18	6	1	3	2	5	26	12	8	1	4
·232	·228	·230	90	89	89	7·1	5·6	6·4	4·395	·980	3rd	22	6	2	0	2	8	1	1	1	2	8	16	9	4	3	18
·237	·234	·236	90	87	89	7·5	6·4	7·0	3·458	·760	3rd	28	3	0	0	1	12	0	0	2	2	2	12	5	8	5	26
·247	·237	·242	93	91	92	7·5	6·5	7·0	5·653	·842	6th	28	0	0	0	2	12	3	1	3	1	1	17	12	12	1	14
·252	·240	·246	91	91	91	7·3	6·9	7·1	3·914	·540	10th	25	1	0	0	1	13	0	4	1	1	7	11	13	5	10	10
·270	·268	·269	93	91	92	7·9	5·4	6·7	4·630	·960	8th	19	0	1	0	2	13	12	4	4	0	1	24	12	8	4	5
·265	·259	·262	92	91	92	7·4	6·0	6·7	6·300	1·170	10th	26	0	1	1	3	13	5	6	2	3	1	25	8	6	10	1
·269	·266	·268	91	89	90	7·5	5·6	6·6	7·035	1·240	10th	26	0	1	0	4	13	4	5	8	2	2	14	19	8	4	0
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·212	·203	·208	90	89	90	8·3	7·5	7·9	11·430	2·140	29th	26	8	5	0	1	19	1	0	2	6	2	6	16	16	3	11
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·233	·231	·232	82	82	82	6·1	6·4	6·3	5·140	·830	16th	24	2	2	0	4	9	2	0	1	5	2	5	16	27	6	0
·266	·269	·268	93	94	93	7·9	7·1	7·5	8·940	1·450	3rd	28	0	3	1	0	14	0	5	1	5	3	6	16	9	3	14
·248	·243	·246	94	95	94	8·4	7·4	7·9	17·430	2·880	18th	28	3	3	1	0	16	9	2	2	2	4	7	17	13	6	9
·277	·264	·271	91	89	90	7·7	6·6	7·2	7·890	1·050	2nd	29	2	2	1	0	11	5	1	2	1	3	9	23	16	3	4
·220	·230	·225	90	90	90	8·1	8·0	8·1	5·974	·672	3rd	30	4	5	0	0	18	0	3	3	3	19	9	11	5	8	1
·237	·239	·238	85	84	84	7·0	5·9	6·5	4·322	·950	3rd	25	3	2	0	1	9	2	1	0	3	6	11	19	14	5	3
·233	·234	·234	92	91	91	7·2	7·2	7·2	4·739	·483	23rd	30	1	3	0	1	15	0	0	0	7	17	12	9	8	4	5
·283	·280	·282	84	85	85	8·0	6·1	7·1	5·775	·930	8th	28	0	3	2	0	11	3	2	0	1	6	13	19	3	12	6

was no wind, the direction of the vane was entered. ‡ Observations were not commenced till January 13th.

TABLE C., JANUARY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS during the month of JANUARY, 1877. Observations are made at 8 a.m. daily.

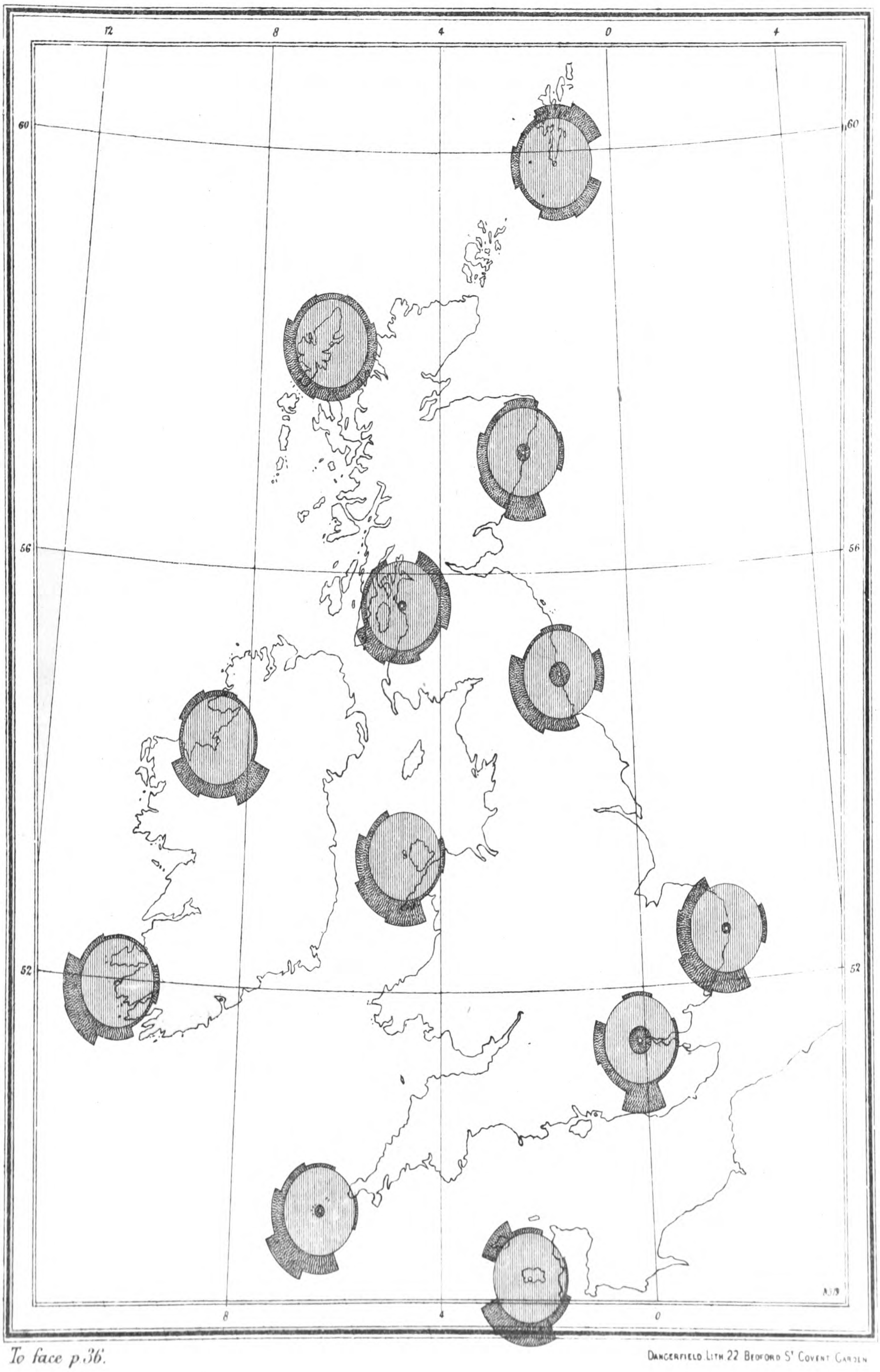
(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			Means of				Absolute Extremes.			
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°		°	
0. SCOTLAND, N.	Sumburgh Head	29·546	38·4	34·4	41·5	38·0	26	2nd, 3rd	47	25th
	Thurso	29·523	36·1	32·1	41·5	36·8	17	4th	50	18th
	Wick	29·545	37·0	32·5	40·8	36·7	22	3rd, 4th	46	8th, 18th
	Stornoway	29·493	37·2	31·9	41·9	36·9	15	3rd	48	16th, 23rd
1. SCOTLAND, E.	Nairn	29·556	35·9	31·8	40·8	36·3	20	3rd, 4th	50	16th
	Aberdeen	29·574	37·3	34·0	41·8	37·9	22	3rd 4th	48	19th
	Leith	29·606	38·5	34·4	45·4	39·9	24	3rd	55	19th
2. ENGLAND, N.E.	Shields	29·669	39·9	37·0	45·5	41·3	29	3rd	56	19th
	Scarborough	29·712	40·7	37·3	45·0	41·2	32	2nd, 3rd	57	19th
	York	29·730	39·7	35·1	46·2	40·7	30	2nd, 3rd, 12th, 13th.	57	19th
3. ENGLAND, E.	Yarmouth	29·816	41·3	37·4	46·1	41·8	31	23rd	54	19th
	Cambridge	29·814	40·4	35·7	48·7	42·2	29	21st, 23rd, 27th.	57	19th
4. MIDLAND COUNTIES.	Nottingham	29·774	40·5	36·1	47·7	41·9	28	12th, 13th	58	19th
	Oxford	29·805	41·5	37·1	48·5	42·8	28	22nd	56	19th
5. ENGLAND, S.	London	29·834	42·3	37·6	49·5	43·6	28	21st, 22nd, 23rd, 27th.	56	19th
	Dover	29·864	44·4	40·5	48·7	44·6	33	27th	54	1st
	Hurst Castle	29·818	46·9	39·8	51·6	45·7	31	12th	54	3rd, 18th 19th.
6. SCOTLAND, W.	Ardrossan	29·617	40·5	36·8	45·2	41·0	27	2nd, 3rd	51	7th
7. ENGLAND, N.W.	Liverpool	29·701	41·3	37·6	46·7	42·2	31	12th	57	19th
	Holyhead	29·671	44·0	40·5	48·7	44·6	35	2nd, 3rd 12th, 13th.	53	19th
8. ENGLAND, S.W.	Pembroke	29·714	46·5	43·3	49·3	46·3	37	3rd	52	18th, 19th
	Portishead	29·778	43·5	37·8	49·6	43·7	31	12th, 13th	56	19th
	Plymouth	29·803	45·0	40·2	51·3	45·8	31	13th	55	3rd
9. IRELAND, N.	Greencastle	29·556	40·3	35·2	46·6	40·4	30	25th	50	23rd, 31st
	Donaghadee	29·622	40·1	35·9	35·2	40·6	29	2nd	50	19th
10. IRELAND, S.	Kingstown	29·656	44·0	39·7	48·4	44·1	35	2nd, 3rd, 13th, 26th, 29th.	54	16th
	Roche's Point	29·675	45·4	40·6	50·2	45·4	32	2nd	53	31st
	Valencia	29·626	46·8	41·2	51·4	46·3	32	2nd	54	3rd, 13th, 16th, 27th.
CHANNEL	Scilly (St. Mary's)	29·782	49·9	45·1	52·5	48·8	39	26th	55	3rd, 18th, 19th.

NAMES OF DISTRICTS.	NAMES OF STATIONS.	TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.		
					Total Fall in the Month.	Maximum Fall in One Day.	Date.
		in.	%		ins.	ins.	
0. SCOTLAND, N.	Sumburgh Head	·191	83	7·1	2·49	0·39	19th
	Thurso	·187	87	6·6	5·16	0·96	19th
	Wick	·195	89	6·2	1·96	0·61	19th
	Stornoway	·196	88	6·2	5·39	0·50	20th
1. SCOTLAND, E.	Nairn	·183	87	5·9	2·62	0·50	4th
	Aberdeen	·190	86	6·0	3·56	0·65	29th
	Leith	·215	92	6·6	4·47	0·74	29th
2. ENGLAND, N.E.	Shields	·206	84	7·2	3·68	0·88	31st
	Scarborough	·224	88	6·9	3·36	1·16	3rd
	York	·220	90	5·5	3·35	0·84	3rd
3. ENGLAND, E.	Yarmouth	·241	93	7·3	2·15	0·41	8th
	Cambridge	·230	92	7·7	2·74	0·63	3rd
4. MIDLAND COUNTIES.	Nottingham	·231	92	7·7	3·43	1·04	3rd
	Oxford	·242	93	7·9	4·63	0·73	3rd
5. ENGLAND, S.	London	·253	94	7·5	4·69	0·73	10th
	Dover	·261	89	6·1	5·47	0·58	8th
	Hurst Castle	·307	96	6·8	?6·13	?0·95	10th
6. SCOTLAND, W.	Ardrossan	·211	84	7·8	8·01	0·89	31st
7. ENGLAND, N.W.	Liverpool	·222	86	7·7	4·43	1·12	3rd
	Holyhead	·265	92	6·5	7·49	1·08	18th
8. ENGLAND, S.W.	Pembroke	·272	86	7·5	5·68	0·82	6th
	Portishead	·262	93	7·2	4·30	0·56	3rd
	Plymouth	·282	94	7·9	6·08	0·89	2nd
9. IRELAND, N.	Greencastle	·221	89	7·5	6·51	0·88	29th
	Donaghadee	·238	96	6·0	5·74	0·58	3rd
10. IRELAND, S.	Kingstown	·242	83	6·7	5·02	1·76	3rd
	Roche's Point	·273	91	6·6	8·07	0·75	6th
	Valencia	·270	85	7·6	8·62	0·84	24th
CHANNEL	Scilly (St. Mary's)	·323	91	9·5	5·48	0·69	10th

NAMES OF DISTRICTS.	NAMES OF STATIONS.	WEATHER, No. of Days of							WIND, No. of Observations of								
		Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
0. SCOTLAND, N.	Sumburgh Head	24	1	0	0	4	12	8	5	7	0	6	5	2	4	2	0
	Thurso	26	9	0	1	4	11	4	3	2	2	4	10	6	3	0	1
	Wick	18	2	0	0	9	15	6	1	2	3	2	10	6	2	4	1
	Stornoway	29	7	7	4	9	14	13	2	2	4	4	5	6	6	2	0
1. SCOTLAND, E.	Nairn	17	7	0	0	11	14	2	0	2	2	0	4	10	2	4	7
	Aberdeen	23	6	3	0	10	13	9	3	1	2	0	10	6	5	2	2
	Leith	24	5	2	0	8	16	3	1	1	3	5	2	10	7	0	2
2. ENGLAND, N.E.	Shields	20	3	1	0	7	19	9	2	0	4	0	5	7	7	1	5
	Scarborough	21	1	1	0	8	16	4	0	1	1	3	7	9	5	4	1
	York	24	2	0	0	12	13	3	3	1	2	1	11	6	5	2	0
3. ENGLAND, E.	Yarmouth	26	0	0	0	5	13	5	0	0	2	0	8	9	6	5	1
	Cambridge	25	0	0	0	7	22	1	1	1	1	0	10	11	3	4	0
4. MIDLAND COUNTIES.	Nottingham	21	3	2	1	6	21	6	1	1	1	2	14	6	1	1	4
	Oxford	27	0	1	0	4	20	2	2	0	1	3	9	9	4	0	3
5. ENGLAND, S.	London	26	0	0	0	5	19	3	1	0	1	1	13	4	5	0	6
	Dover	27	0	1	1	5	9	2	1	1	1	0	9	9	6	4	0
	Hurst Castle	28	0	0	0	6	16	5	0	4	1	0	5	11	4	4	2
6. SCOTLAND, W.	Ardrossan	27	4	4	2	4	19	8	0	5	6	3	5	7	2	2	1
7. ENGLAND, N.W.	Liverpool	21	0	2	0	4	17	3	0	1	3	10	8	4	4	1	0
	Holyhead	28	0	1	0	4	7	7	0	0	2	1	11	9	6	2	0
8. ENGLAND, S.W.	Pembroke	28	0	0	0	0	13	9	1	1	3	2	5	11	4	4	0
	Portishead	25	0	0	0	3	14	11	0	2	2	2	6	10	7	1	1
	Plymouth	29	0	0	1	7	23	3	0	2	4	1	5	11	3	5	0
9. IRELAND, N.	Greencastle	26	2	0	1	7	23	2	0	3	3	2	9	2	9	3	0
	Donaghadee	28	1	0	0	8	10	8	0	1	2	3	10	9	5	1	0
10. IRELAND, S.	Kingstown	23	0	0	0	4	7	4	0	0	3	4	11	1	9	2	1
	Roche's Point	30	0	0	0	5	11	10	3	1	0	2	4	10	7	4	0
	Valencia	31	0	2	0	1	13	14	1	1	2	1	5	10	9	2	0
CHANNEL	Scilly (St. Mary's)	28	0	0	0	0	27	12	1	0	1	0	7	12	6	3	1

MONTHLY WIND CHART FOR JANUARY 1877.


12
8
4
0
4
60
60
56
56
52
52
8
4
0
N.19

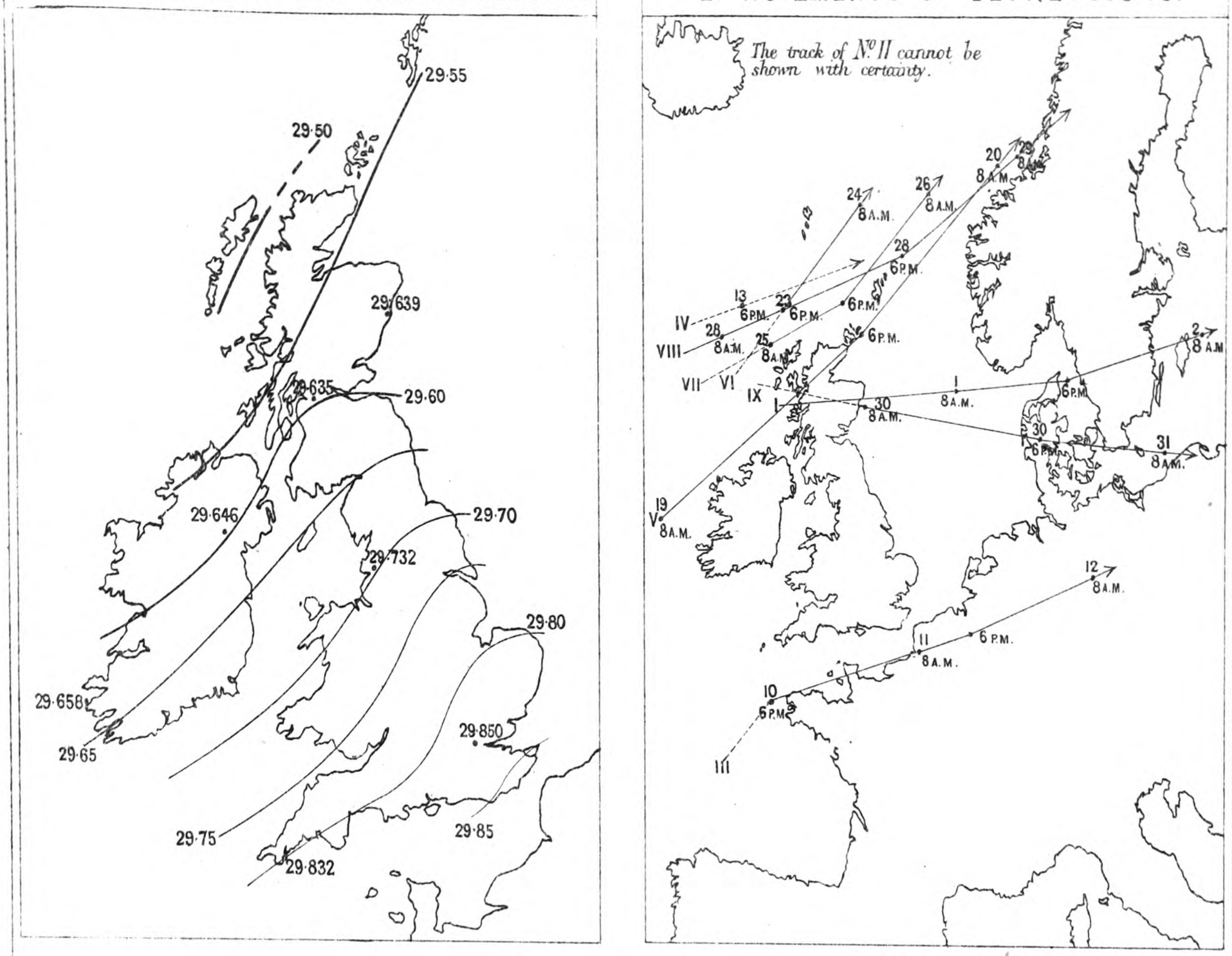
To face p. 36.

DANGERFIELD LITH 22 BEDFORD ST COVENT GARDEN

MONTHLY WEATHER CHART, JANUARY 1877.

1. DISTRIBUTION OF MEAN PRESSURE

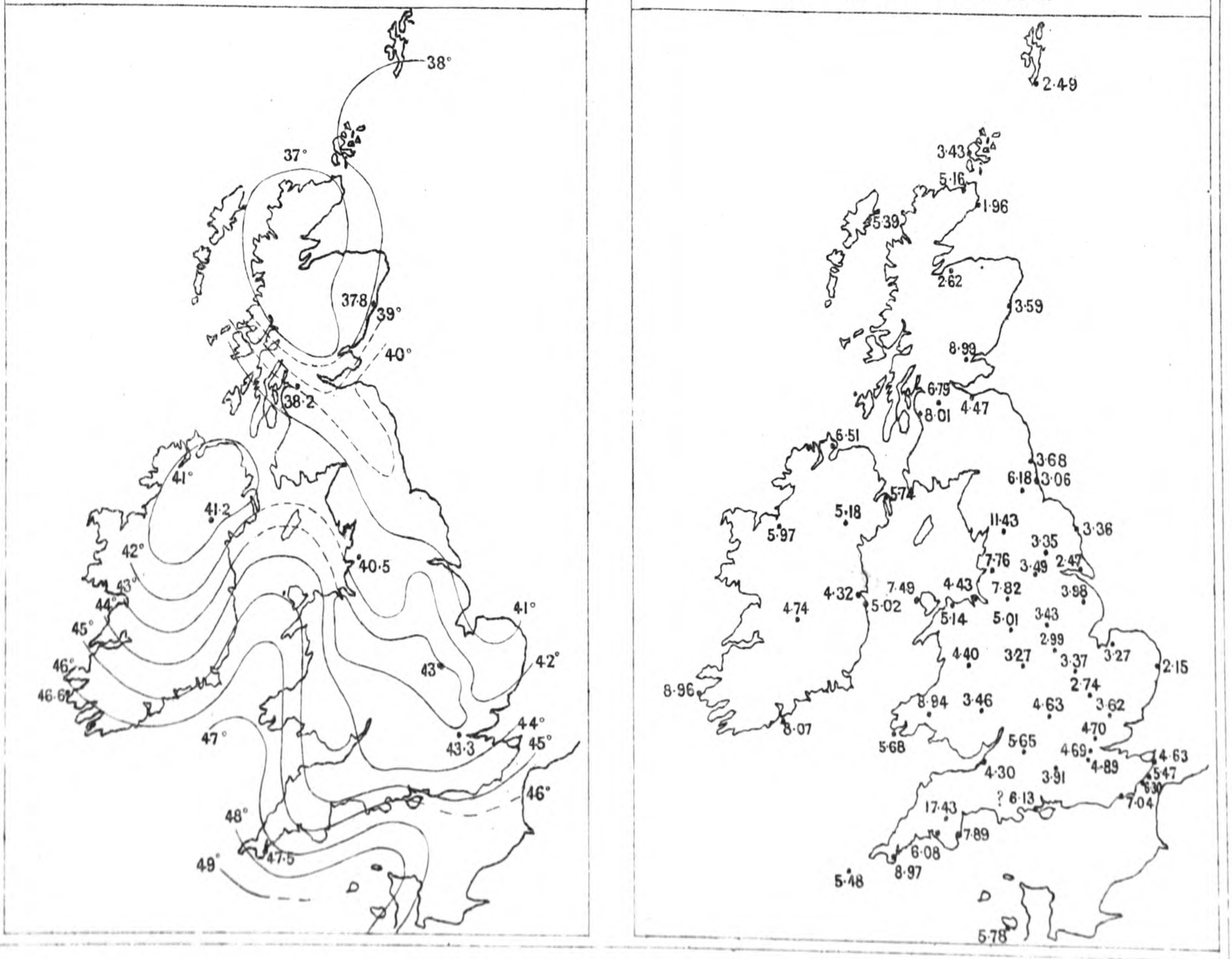
2. MOVEMENTS OF DEPRESSIONS.


29·55
29·50
29·639
29·635
29·60
29·646
29·70
29·732
29·80
29·658
29·65
29·850
29·75
29·85
29·832
24 8 A.M.
26 8 A.M.
20
29 8 A.M.
8 A.M.
28 6 P.M.
13 6 P.M.
23 6 P.M.
6 P.M.
IV
28 8 A.M.
VIII
25 8 A.M.
6 P.M.
2 8 A.M.
VII
VI
IX
I
30 8 A.M.
1 8 A.M.
6 P.M.
30 6 P.M.
31 8 A.M.
19 V 8 A.M.
12 8 A.M.
11 8 A.M.
6 P.M.
10 6 P.M.
III

The track of No. II cannot be shown with certainty.

3. DISTRIBUTION OF MEAN TEMPERATURE.

4. RAINFALL

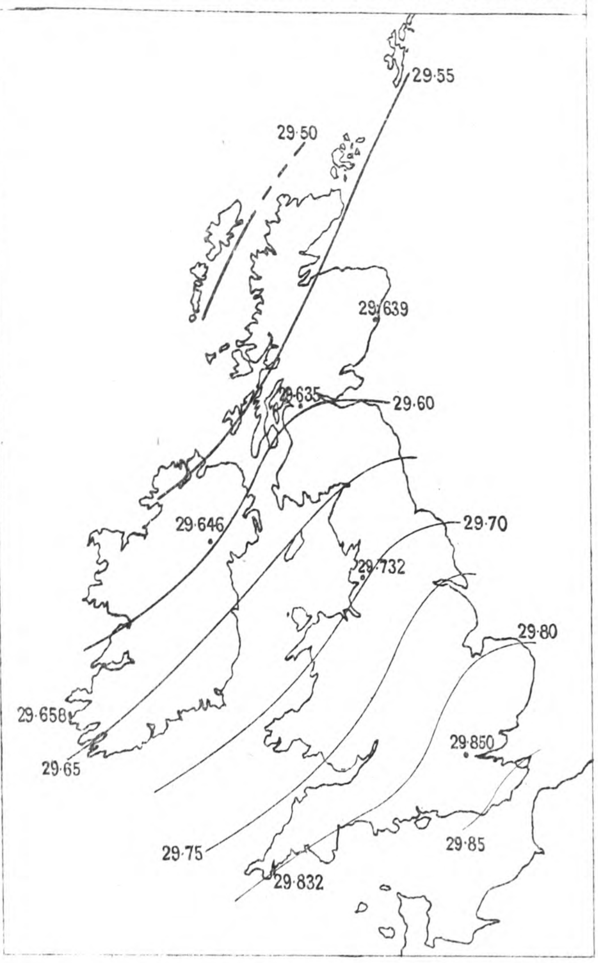

38°
37°
37·8
39°
40°
38·2
41°
41·2
42°
40·5
43°
44°
45°
46°
46·6
41°
42°
43°
44°
45°
43·3
47°
46°
48°
47·5
49°
2·49
3·43
5·16
1·96
5·39
2·62
3·59
8·99
6·79
8·01
4·47
6·51
3·68
6·18
3·06
5·18
5·74
5·97
11·43
3·36
3·35
7·76
3·49
2·47
7·49
4·43
7·82
3·98
4·32
5·02
4·74
5·14
5·01
3·43
2·99
4·40
3·27
3·37
3·27
2·15
8·96
8·94
3·46
2·74
4·63
3·62
8·07
4·70
5·68
5·65
4·69
4·63
4·89
5·47
4·30
3·91
6·30
7·04
17·43
? 6·13
7·89
6·08
8·97
5·48
5·78

To follow Wind Chart for January.

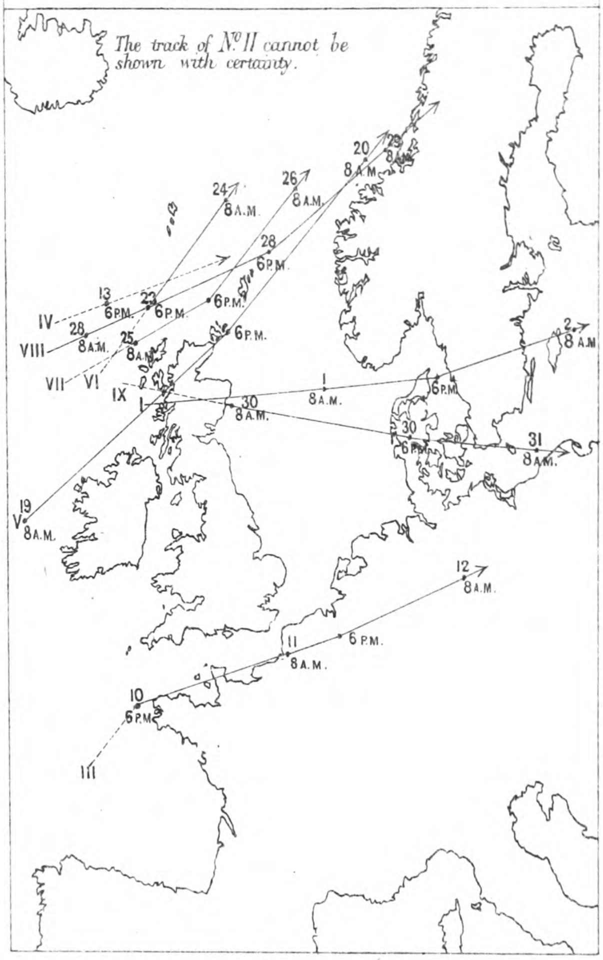
DANGERFIELD LITH 22 BEDFORD ST COVENT GARDEN
8319

MONTHLY WEATHER CHART, JANUARY 1877.

1. DISTRIBUTION OF MEAN PRESSURE

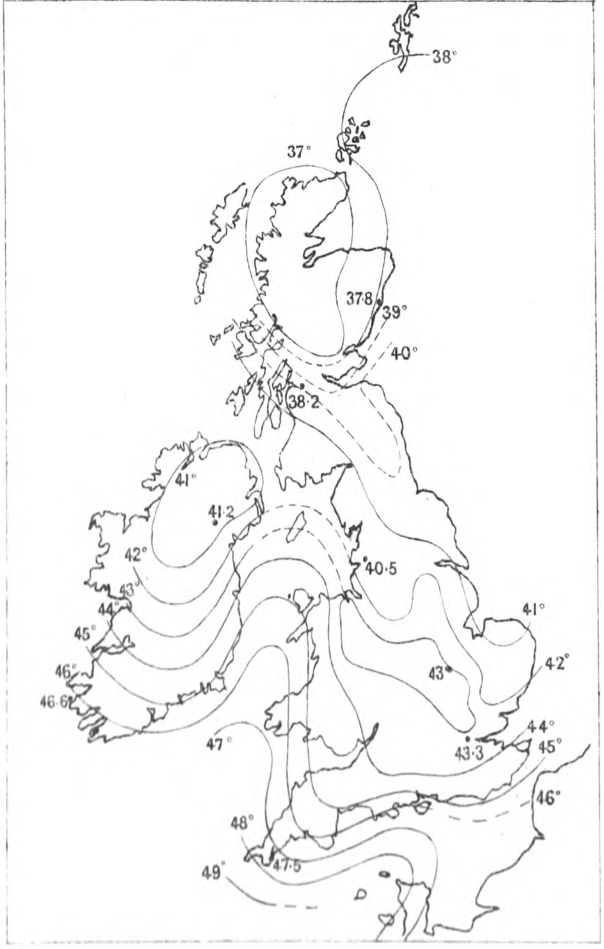

29·55
29·50
29·639
29·635
29·60
29·646
29·70
29·732
29·80
29·658
29·65
29·850
29·75
29·85
29·832

2. MOVEMENTS OF DEPRESSIONS.

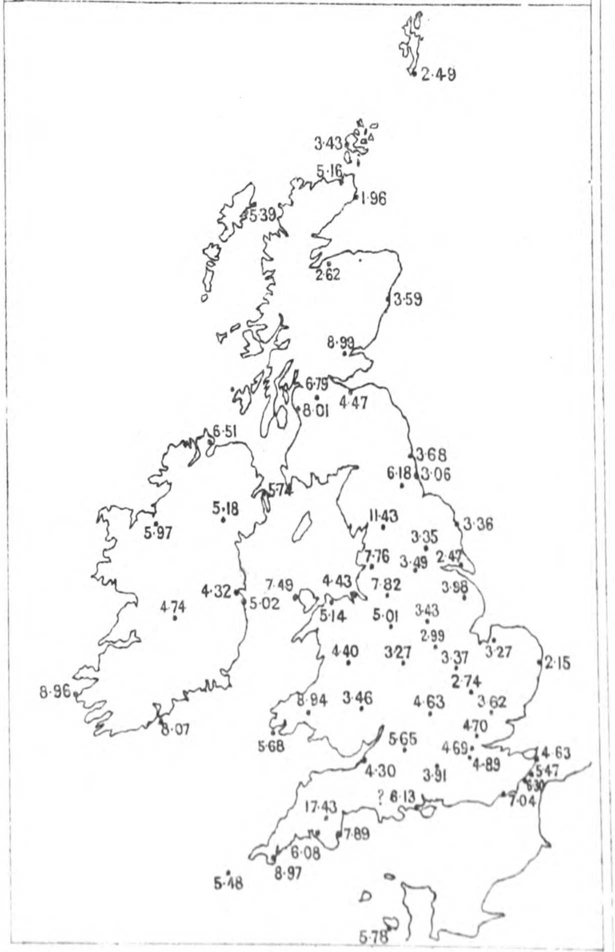

The track of No. II cannot be shown with certainty.

29
8 A.M.
20
8 A.M.
24
8 A.M.
26
8 A.M.
28
6 P.M.
13
6 P.M.
23
6 P.M.
6 P.M.
IV
28
8 A.M.
VIII
25
8 A.M.
6 P.M.
VII
VI
IX
I
1
8 A.M.
30
8 A.M.
6 P.M.
2
8 A.M.
30
6 P.M.
31
8 A.M.
19
V
8 A.M.
12
8 A.M.
11
8 A.M.
6 P.M.
10
6 P.M.
III

3. DISTRIBUTION OF MEAN TEMPERATURE.


38°
37°
37·8
39°
40°
38·2
41°
41·2
42°
43°
44°
45°
46°
46·6
40·5
41°
42°
43°
44°
45°
43·3
46°
47°
48°
47·5
49°

4. RAINFALL


2·49
3·43
5·16
1·96
5·39
2·62
3·59
8·99
6·79
8·01
4·47
6·51
3·68
6·18
3·06
5·74
5·18
5·97
11·43
3·36
3·35
7·76
3·49
2·47
4·32
7·49
4·43
7·82
3·98
4·74
5·02
5·14
5·01
3·43
2·99
4·40
3·27
3·37
3·27
2·15
2·74
8·96
8·94
3·46
4·63
3·62
8·07
4·70
5·68
5·65
4·69
4·89
4·63
4·30
3·91
5·47
6·30
? 6·13
7·04
17·43
7·89
6·08
8·97
5·48
5·78

To follow Wind Chart for January.

DANGERFIELD LITH 22 BEDFORD ST COVENT GARDEN
8319

REMARKS FOR FEBRUARY 1877.

(*Tables A. to C., February, with Monthly Wind and Weather Charts.*)

Wind.—Throughout the month the wind blew with remarkable persistence from the Westward, and Easterly winds were hardly experienced at all. At the commencement moderate Westerly winds were blowing all over the kingdom, and they continued with little change, backing occasionally to South and in the extreme north to South-east, and then veering again to West and North-west—until the 20th, when a general veering to the Northward occurred, in the rear of depression No. XIII. The Northerly wind continued until the 24th, when it backed again to West, but on the 26th it once more veered, and Northerly and North-westerly winds prevailed thence till the end of the month. From the Monthly Chart it will at once be seen how prevalent was the Westerly direction, Sandwick being the only station at which the percentage of North-east or South-east winds was at all considerable.

Pressure.—The mean pressure decreased from 30·05 inches at Scilly to 29·5 inches at the Shetlands, and therefore, while it was slightly above the average at the former place, it was considerably below it at the latter, indicating rather steep gradients for Westerly winds. The maximum readings were recorded at each observatory, except Falmouth, on the 28th; at Falmouth a slightly higher value was obtained on the 4th, and on both occasions the centre of an anticyclonic system lay to the southward of our Islands. The lowest readings, at Glasgow, Stonyhurst, and Kew, occurred during the night of the 19th–20th, with the passage in the neighbourhood of those stations of the centre of depression No. XIII., but at Falmouth and in Ireland the lowest point was reached on the 26th, and at Aberdeen on the 25th. The minima were, however, by no means low, and the range of pressure during the month was slight, amounting to but 1·4 inch at Stonyhurst, and to only eight-tenths of an inch at Valencia.

Movements of Depressions.—The depressions observed were not numerous. In most cases they travelled eastward across the northern limits of the kingdom, but in one instance (No. XIII.) the centre, after reaching the west coast of Scotland, passed thence in a south-easterly direction over England to Holland, and then travelled eastward to Germany.

A large area of high pressure existed during nearly the whole month to the south and south-west of the British Isles.

Temperature.—Temperature was rather above the mean over England and Ireland, but normal or nearly so north of the Firth of Forth; the difference between the means at Scilly and at Wick amounted to 12°·4.

The maxima occurred rather irregularly, but generally about the 14th over the Midlands, and about the 7th over the southern and eastern counties; as a rule, they did not exceed 55°, but in one or two cases 60° was reached. The minimum was recorded nearly everywhere on the 27th or 28th, during the prevalence of a Northerly wind, but only in one or two exceptional cases did the thermometer fall below 20°. The total range of temperature amounted to 38° at Nottingham, and to upwards of 30° at most of the midland, eastern, and northern stations, but at Pembroke it was only 19° and at Scilly but 17°.

Vapour Tension.—This was greatest over the south-western portions of the country, and least over north Scotland. *Relative Humidity*, on the other hand, was somewhat irregularly distributed, but was highest on the east coast of England.

Rainfall.—The fall of rain was of nearly the average amount; in the north and east it slightly exceeded it, but in the south-west there was a small deficit. The maximum falls were not very large, at a few stations in the north-west of England upwards of an inch fell on the 25th, but the maximum fall in 24 hours was, as a rule, less than half-an-inch.

TABLE A., FEBRUARY.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of FEBRUARY 1877; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).						TEMPERATURE in the Shade (In Degrees Fahrenheit).						HYGROMETRIC VALUES.		RAINFALL (In English Inches).
	Mean for the Month.	Extremes.				Range.	Mean for the Month.	Extremes.				Range.	Tension of Vapour (In English Inches).	Relative Humidity (Saturation=100).	
		Minimum.		Maximum.				Minimum.		Maximum.					
		Reading.	Date.	Reading.	Date.			Reading.	Date.	Reading.	Date.				
Valencia - -	ins. 30·015	ins. 29·492	D. H. 26th, 1 a.m.	ins. 30·305	D. H. 28th, 11 a.m.	ins. 0·813	° 47·5	° 33·4	D. H. 28th, 7 a.m.	° 54·1	D. H. 6th, 9 p.m.	° 20·7	in. ·278	% 86	ins. 3·660
Armagh - -	29·871	·121	26th, 1 a.m.	·379	28th, 8 p.m.	1·258	42·7	27·7	28th, 1 a.m.	51·9	14th, 4 p.m. 15th, Noon	24·2	·237	86	2·948
Glasgow - -	·736	29·040	19th, 11 p.m.	·327	28th, 10 p.m.	1·287	40·6	22·0	27th, 6 a.m.	51·2	15th, Noon	29·2	·208	83	4·550
Aberdeen - -	29·663	28·954	25th, 8 a.m.	·313	28th, 8 p.m.	1·359	38·3	21·0	27th, 8 a.m.	50·7	15th, 2 p.m.	29·7	·187	81	2·825
Falmouth - -	30·069	29·441	26th, 5 a.m.	·429	4th, 10 p.m. 11 p.m.	0·988	47·2	34·9	28th, 8 a.m.	55·2	14th, 1 p.m.	20·3	·277	86	2·785
Stonyhurst - -	29·845	28·980	20th, 3 a.m.	·396	28th, 9 p.m.	1·416	41·6	21·0	28th, Midt.	51·2	2nd, 4 p.m. 15th, 3 p.m.	30·2	·227	87	5·118
Kew - -	29·943	29·075	20th, 7 a.m.	30·395	28th, Midt.	1·320	44·5	27·0	28th, 6 a.m.	57·6	7th, 1 p.m.	30·6	·235	80	1·735

TABLE B., FEBRUARY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not
(The Stations are grouped in Districts, and then arranged in order of Latitude,

Names of Districts.	Names of Stations.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	Air Temperature.									
						Means of			Absolute Extremes.			
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°	°	°		°	
0. SCOTLAND, N.	Sandwick Manse (Orkneys)	29·579	37·9	37·5	37·7	34·3	42·1	38·2	20·3	27th	48·2	15th
1. SCOTLAND, E.	Glenalmond	29·721	37·4	36·1	36·8	31·5	44·6	38·1	19·0	27th	53·0	24th
2. ENGLAND, N.E.	Seaham	29·748	41·7	40·0	40·9	35·5	47·7	41·6	23·8	27th, 28th	55·5	15th
	Durham*	29·765	41·9	38·9	40·4	35·1	47·1	41·1	21·3	27th	53·8	24th
	Hull	29·824	41·7	40·8	41·3	36·5	47·1	41·8	23·6	28th	54·3	14th
	Kelstern	29·845	39·5	38·4	39·0	34·5	46·2	40·4	18·9	28th	55·1	14th
3. ENGLAND, E.	Hillington	29·850	41·4	41·2	41·3	36·7	47·5	42·1	25·0	28th	54·8	14th
	Audley End	29·919	42·8	42·7	42·8	38·0	48·0	43·0	24·0	28th	56·2	7th
	Chigwell Row	29·962	43·2	42·9	43·1	37·7	48·4	43·1	24·0	28th	57·0	7th
4. MIDLAND COUNTIES.	Wakefield	29·851	43·1	42·8	43·0	38·6	48·8	43·7	22·2	27th	55·6	15th
	Buxton	29·884	39·8	39·1	39·5	35·9	43·8	39·9	20·0	28th	50·9	14th, 15th
	Cheadle	29·893	39·8	40·4	40·1	35·4	45·7	40·6	22·3	28th	52·2	14th
	Leicester	29·892	43·0	43·0	43·0	38·5	48·1	43·3	22·8	28th	56·2	14th
	Uppingham	29·881	40·9	40·5	40·7	36·3	46·6	41·5	22·0	28th	54·7	14th
	Oscott	29·899	41·6	41·2	41·4	37·5	47·6	42·6	23·0	28th	55·7	10th
	Churchstoke	29·934	42·6	42·3	42·5	38·0	47·9	43·0	25·3	28th	55·1	14th
	Hereford	29·930	43·5	42·9	43·2	39·4	49·0	44·2	27·0	28th	55·9	14th
5. ENGLAND, S.	Marlborough	29·977	42·5	41·7	42·1	38·4	48·6	43·5	24·7	28th	56·2	7th
	Strathfield Turgiss	29·963	43·7	42·5	43·1	38·6	49·2	43·9	25·0	28th	57·6	7th
	Ramsgate	29·920	43·9	43·4	43·7	38·5	49·3	43·9	25·9	28th	57·2	7th
	Folkestone	29·934	43·0	42·9	43·0	38·8	48·8	43·8	25·9	28th	59·0‡	8th
	Hastings	29·961	43·5	42·9	43·2	39·1	48·2	43·7	24·0	28th	54·0	11th
6. SCOTLAND, W.	——	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND, N.W.	Hawes	29·832	39·7	38·0	38·9	34·7	43·2	39·0	15·8	28th	49·8	2nd
	Prestwich	29·864	41·2	40·7	41·0	37·2	46·3	41·8	22·3	28th	53·3	15th
	Llandudno	29·890	45·1	44·0	44·6	41·1	49·0	45·1	28·5	28th	56·0	2nd
8. ENGLAND, S.W.	Caermarthen	29·970	45·7	43·5	44·6	40·1	50·4	45·3	30·0	28th	55·9	15th
	Dartmoor	30·032	40·5	40·2	40·4	36·7	44·6	40·7	26·0	28th	49·6	7th
	Babbacombe	30·032	46·5	44·3	45·4	41·3	51·5	46·4	28·0	28th	57·3	7th
9. IRELAND, N.	Markree Castle	29·889	43·6	42·2	42·9	38·0	48·7	43·4	26·9	28th	54·2	6th
10. IRELAND, S.	Dublin	29·931	44·1	43·9	44·0	40·2	49·2	44·7	27·4	28th	57·2	15th
	Parsonstown	29·956	43·8	42·8	43·3	39·0	49·9	44·5	22·9	28th	56·6	14th
CHANNEL	Jersey (St. Aubin's)	30·115	47·4	46·	47·0	43·3	50·9	47·1	34·2	28th	55·2	9th

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* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† Wind force not recorded;

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of FEBRUARY 1877.
corrected for Diurnal Range.
beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10).			RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	%	%	%				ins.	ins.																	
·205	·203	·204	90	91	91	6·6	5·8	6·2	4·330	·640	12th	26	9	1	0	2	8	8	5	0	1	3	6	8	12	15	6
·182	·180	·181	80	81	81	6·2	4·9	5·6	3·260	·540	11th	16	8	1	0	4	7	0	6	0	2	2	2	15	16	7	6
·227	·218	·223	87	89	88	6·3	3·5	4·9	1·820	·280	11th	17	3	2	0	4	4	1	7	0	0	1	4	11	23	9	1
·232	·215	·224	86	88	87	6·2	5·4	5·8	2·189	·357	3rd	16	4	0	0	2	8	1	4	1	0	1	11	11	17	11	0
·243	·236	·240	93	93	93	6·3	4·1	5·2	2·030	·380	25th	22	2	0	0	5	5	0	1	2	0	1	2	16	12	18	4
·235	·228	·232	94	94	94	6·8	5·9	6·4	2·615	·667	25th	20	5	0	0	3	9	0	4	0	0	1	1	14	17	17	2
·245	·237	·241	92	90	91	7·6	5·9	6·8	2·774	·460	20th	20	6	3	0	3	12	3	4	0	0	0	3	10	14	24	1
·254	·249	·252	90	89	89	7·2	5·8	6·5	2·270	·330	22nd	18	6	1	0	2	11	0	1	0	0	0	0	14	10	29	2
·251	·244	·248	90	88	89	8·1	5·5	6·8	1·680	·350	13th	14	3	2	0	1	9	0	7	1	0	0	1	19	16	11	1
·250	·248	·249	88	88	88	6·1	—	—	1·800	·580	25th	20	0	0	0	0	0	0	5	0	0	0	5	15	21	10	0†
·219	·209	·214	86	85	86	8·5	8·7	8·6	7·855	1·430	25th	24	7	0	1	1	21	2	7	1	0	0	0	1	25	20	2
·217	·224	·220	89	89	89	6·0	6·3	6·2	3·660	·480	19th, 22nd	23	5	2	0	3	9	4	6	1	0	0	5	22	8	14	0
·234	·238	·236	84	86	85	7·5	6·0	6·8	2·680	·770	25th	17	4	0	0	3	13	4	7	0	0	0	6	17	15	11	0
·234	·226	·230	89	87	88	6·2	6·5	6·4	1·798	·477	25th	18	4	0	0	3	10	1	4	0	0	0	3	16	9	20	4
·233	·231	·232	86	86	86	7·3	6·9	7·1	1·850	·370	25th	18	5	2	0	3	15	3	7	0	0	0	10	13	19	7	0
·240	·239	·240	86	86	86	6·8	5·3	6·1	2·359	·650	19th	19	4	2	0	0	5	0	4	1	0	0	2	20	11	15	3
·242	·236	·239	84	84	84	6·9	6·4	6·7	1·548	·360	13th	19	3	0	0	3	11	0	8	1	0	0	1	10	16	11	9
·245	·245	·245	89	91	90	7·1	7·4	7·3	1·608	·358	19th	19	3	2	0	3	14	2	0	0	0	0	1	14	23	15	3
·244	·241	·243	84	86	85	6·9	6·1	6·5	1·404	·311	19th	16	1	0	0	4	12	0	11	1	0	0	2	8	21	11	2
·267	·254	·261	91	88	90	7·6	7·1	7·4	1·890	·250	20th	18	5	1	0	2	14	5	2	1	0	0	1	20	19	13	0
·261	·260	·261	94	94	94	8·1	6·8	7·5	2·410	·410	19th	22	6	1	1	2	16	1	8	0	0	0	2	14	19	13	0
·258	·244	·251	89	86	87	8·0	7·0	7·5	2·675	·485	18th	19	2	2	0	3	17	2	6	2	0	0	1	11	28	7	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·218	·208	·213	85	87	86	8·5	6·0	7·3	5·770	·660	19th	23	8	3	0	2	14	0	4	0	1	0	1	15	26	8	1
·227	·222	·225	89	88	89	8·1	6·9	7·5	4·499	1·200	25th	20	5	4	0	1	16	0	2	0	0	2	8	9	17	9	9
·251	·241	·246	83	84	84	7·1	6·6	6·8	4·140	·910	25th	22	2	5	0	1	12	0	14	0	0	0	2	5	32	3	0
287	·272	·280	92	94	93	7·8	7·1	7·5	4·250	·480	1st	24	2	3	0	1	15	0	10	0	0	0	1	17	13	9	6
·241	·242	·242	93	94	94	7·8	7·5	7·7	6·860	1·130	12th	26	6	3	0	0	13	5	10	3	0	0	0	11	17	12	3
·268	·263	·266	83	88	86	6·6	6·6	6·6	1·610	·260	12th	18	3	4	0	2	14	3	6	2	0	0	1	15	21	10	1
·259	·236	·248	90	86	88	8·5	7·0	7·8	4·349	·620	2nd	24	1	8	0	0	12	1	6	0	0	4	3	16	8	19	0
·249	·242	·246	84	82	83	6·9	5·9	6·4	1·560	·421	13th	19	3	5	0	2	10	1	2	0	0	1	2	6	33	12	0
·265	·248	·257	91	88	89	7·8	7·9	7·9	2·320	·378	13th	26	0	1	0	1	17	0	2	0	0	3	4	19	19	8	1
·276	·273	·275	83	85	84	9·0	6·8	7·9	2·163	·302	12th	25	1	6	1	0	15	1	6	3	0	0	1	17	17	10	2

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it is probable that sometimes when there was no wind, the direction of the vane was entered.

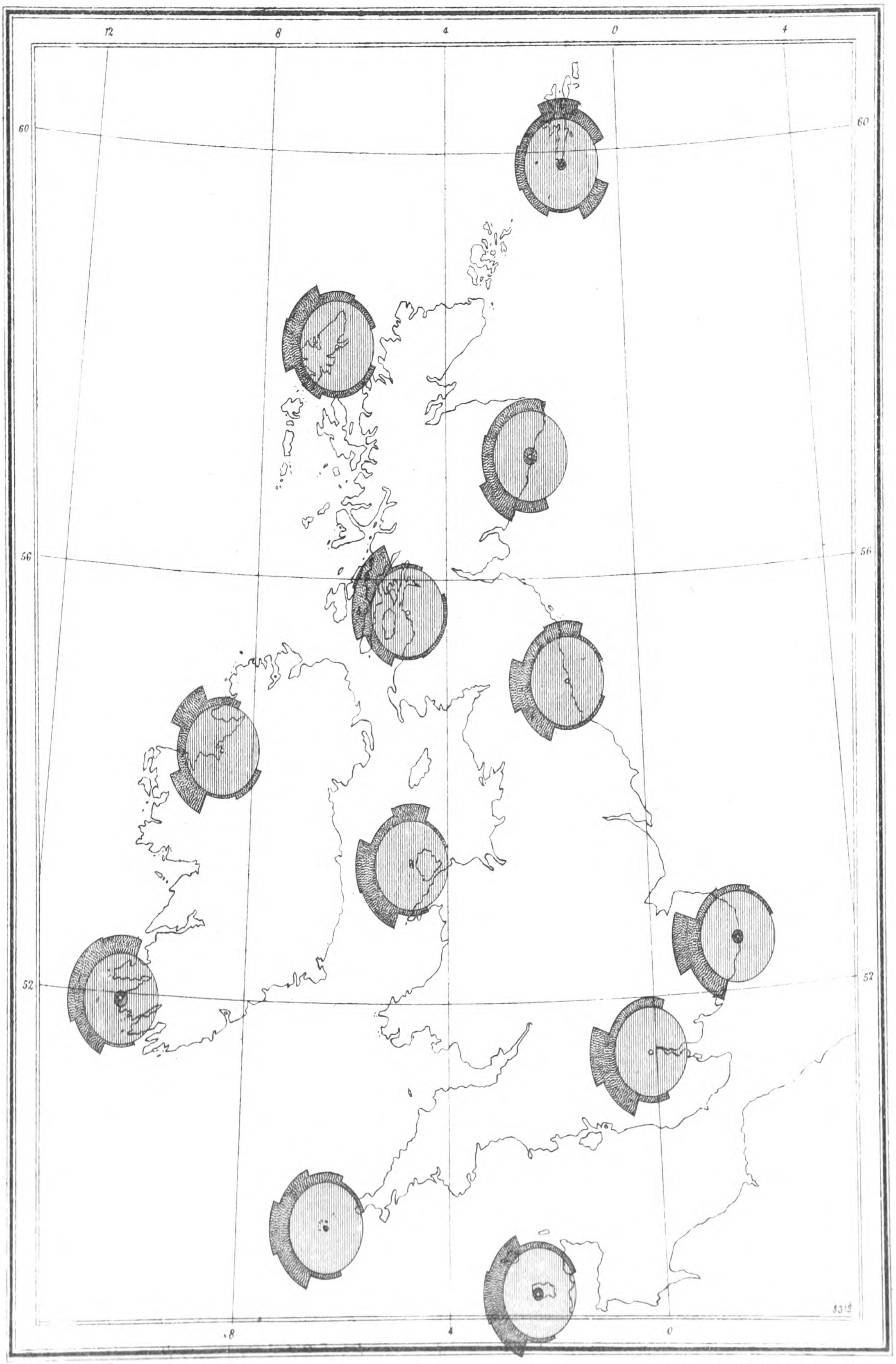
‡ Probable reading.

TABLE C., FEBRUARY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the month of FEBRUARY 1877. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.								TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
				Means of			Absolute Extremes.																									
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
		ins.	°	°	°	°	°		°		in.	%		ins.	ins.																	
0. SCOTLAND, N.	Sumburgh Head	29·515	36·6	32·3	41·5	36·9	18	27th	47	1st, 6th	0·184	85	6·3	4·09	0·43	3rd, 4th	26	2	0	0	5	6	7	7	4	0	5	1	3	4	3	1
	Thurso - -	29·566	37·5	33·5	43·6	38·6	22	27th	50	6th	·199	89	7·5	4·68	0·50	8th	28	11	1	0	1	16	3	4	0	1	1	6	3	5	8	0
	Wick - -	29·581	36·9	31·8	42·2	37·0	19	27th, 28th	49	6th	·199	91	7·0	3·17	0·49	12th	23	4	1	0	3	14	4	3	0	0	4	2	5	6	7	1
	Stornoway -	29·609	37·2	33·0	42·2	37·6	20	28th	50	1st, 6th	·202	91	6·9	6·44	0·83	10th	27	9	4	2	6	14	13	3	2	0	2	2	4	8	7	0
1. SCOTLAND, E.	Nairn - -	29·627	37·2	33·9	42·5	38·2	19	28th	52	6th, 15th	·189	85	5·9	2·38	0·52	10th	20	3	0	0	9	10	7	1	0	0	1	0	6	10	5	5
	Aberdeen -	29·616	37·6	34·1	40·1	37·1	22	27th	51	15th	·186	83	4·2	2·74	0·65	12th	16	7	0	0	13	7	4	4	0	0	0	4	9	5	4	2
	Leith - -	29·704	39·9	35·7	49·6	42·7	24	27th	58	14th	·223	91	5·5	1·80	0·36	9th	14	1	0	0	6	7	0	3	1	1	1	2	5	10	4	1
2. ENGLAND, N.E.	Shields - -	29·740	40·6	37·2	46·9	42·1	24	28th	54	15th	·215	86	6·7	1·85	0·32	10th	19	4	2	0	4	12	12	5	1	0	1	1	6	10	4	0
	Scarborough -	29·771	41·0	37·0	46·6	41·8	25	28th	53	24th	·231	90	6·6	1·95	0·25	19th	22	4	1	0	6	12	2	4	1	0	0	1	10	8	4	0
	York - -	29·804	40·9	35·8	48·1	42·0	22	28th	55	14th	·228	90	5·5	2·04	0·34	25th	21	3	0	0	9	9	2	7	0	0	0	3	6	9	3	0
3. ENGLAND, E.	Yarmouth -	29·825	40·4	36·7	46·2	41·5	25	28th	54	7th	·238	95	7·1	2·82	0·46	20th	24	5	6	0	3	11	2	2	1	0	0	0	7	14	3	1
	Cambridge -	29·881	41·1	36·9	49·6	43·3	24	28th	57	10th	·236	92	8·0	2·00	0·27	13th	20	4	0	0	4	19	1	2	0	0	0	2	13	5	6	0
4. MIDLAND COUNTIES.	Nottingham -	29·868	41·3	36·4	48·8	42·6	22	28th	60	14th	·230	89	5·9	1·99	0·42	19th	21	2	1	0	9	12	2	3	0	0	0	4	10	4	7	0
	Oxford - -	29·917	42·7	39·3	48·9	44·1	25	28th	55	7th, 14th	·248	90	9·1	1·63	0·41	13th	18	0	0	0	0	22	0	3	0	0	0	1	9	13	2	0
5. ENGLAND, S.	London - -	29·918	43·3	39·2	49·5	44·4	25	28th	58	7th	·250	89	7·0	1·79	0·41	13th	19	2	0	0	4	12	2	3	0	0	0	2	8	12	3	0
	Dover -	29·906	43·1	40·1	47·9	44·0	26	28th	54	10th	·246	88	5·6	2·61	0·68	13th	22	5	1	1	6	8	1	2	1	0	0	0	12	9	4	0
	Hurst Castle -	29·965	45·5	41·3	49·1	45·2	27	28th	60	9th	·286	94	6·8	?1·40	0·35	12th	?17	0	0	0	6	15	2	2	2	0	0	0	2	13	9	0
6. SCOTLAND, W. -	Ardrossan -	29·753	42·5	39·0	46·9	43·0	21	27th	52	9th	·225	84	6·6	4·62	0·56	10th	24	1	0	0	4	9	5	1	0	1	1	1	4	9	11	0
7. ENGLAND, N.W.	Liverpool -	29·854	43·3	40·5	47·4	44·0	30	28th	55	15th	·239	85	7·4	3·13	1·11	25th	22	1	1	0	3	15	3	2	1	0	0	3	5	12	5	0
	Holyhead -	29·883	44·9	42·1	48·4	45·3	32	28th	54	25th	·258	87	7·5	2·52	0·54	25th	23	0	4	0	2	11	5	5	1	0	0	2	8	9	3	0
8. ENGLAND, S.W.	Pembroke -	29·961	46·3	43·4	48·4	45·9	33	28th	52	14th, 15th	·274	88	7·2	1·73	0·19	12th	24	0	0	0	1	12	9	5	0	0	0	1	7	8	7	0
	Portishead -	29·945	43·7	38·8	49·4	44·1	29	28th	55	2nd	·254	88	5·8	2·40	0·37	12th	19	0	0	0	8	10	7	3	0	0	0	2	8	12	3	0
	Plymouth -	30·033	45·4	41·5	52·1	46·8	32	27th	58	10th	·290	96	7·2	1·75	0·42	12th	18	0	2	0	4	16	2	4	0	0	0	0	6	12	6	0
9. IRELAND, N.	Greencastle -	29·777	41·8	37·5	47·2	42·4	27	28th	51	2nd, 6th, 9th, 11th, 14th, 24th.	·236	89	7·9	5·29	0·60	2nd	27	2	0	0	5	20	1	4	3	0	0	1	4	12	4	0
	Donaghadee -	29·816	41·7	38·1	46·4	42·3	30	27th, 28th	52	6th, 14th	·247	93	5·0	2·73	0·81	19th	19	1	0	0	9	6	4	3	1	0	0	3	5	10	6	0
10. IRELAND, S.	Kingstown -	29·901	44·6	41·2	49·4	45·3	30	28th	57	6th	·237	80	6·8	1·11	0·39	13th	18	0	0	0	4	11	6	0	0	0	0	2	2	14	10	0
	Roche's Point -	29·999	45·6	41·9	50·9	46·4	29	28th	56	13th	·263	86	5·6	2·47	0·26	10th	21	0	1	0	7	9	3	5	1	0	0	0	4	9	9	0
	Valencia -	30·014	47·0	43·0	51·5	47·3	31	28th	55	6th	·277	87	7·7	3·11	0·36	12th	26	0	0	0	1	15	10	6	0	0	0	1	5	7	7	2
CHANNEL - -	Scilly (St. Mary's)	30·073	48·9	47·3	51·5	49·4	39	22nd, 28th	56	14th	·311	91	8·6	1·56	0·16	18th	26	0	0	0	0	16	5	3	1	0	0	2	7	9	6	0

MONTHLY WIND CHART FOR FEBRUARY 1877.

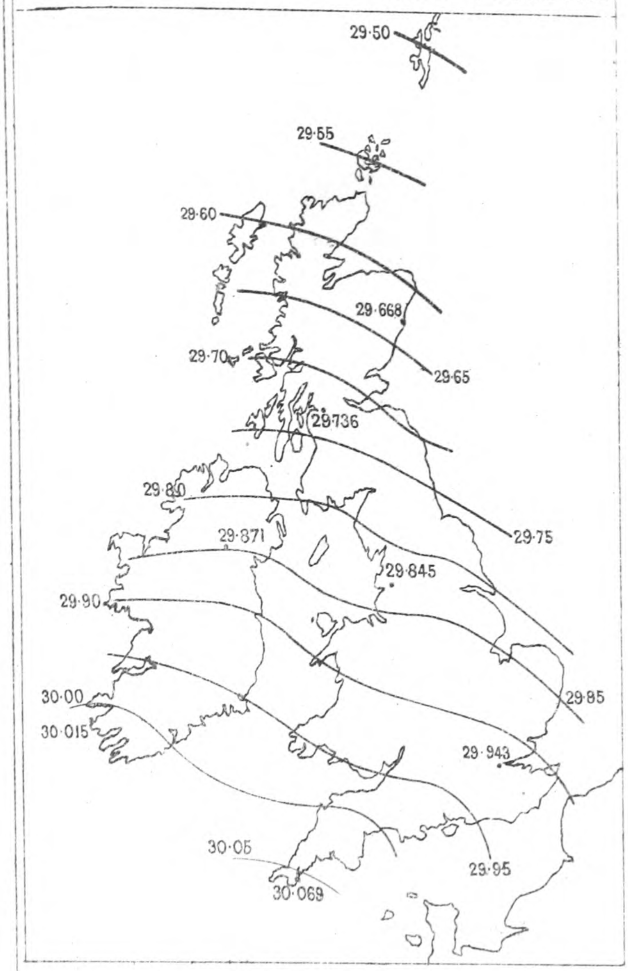

12
8
4
0
4
60
60
56
56
52
52
8
4
0
8319

To face p. 42.

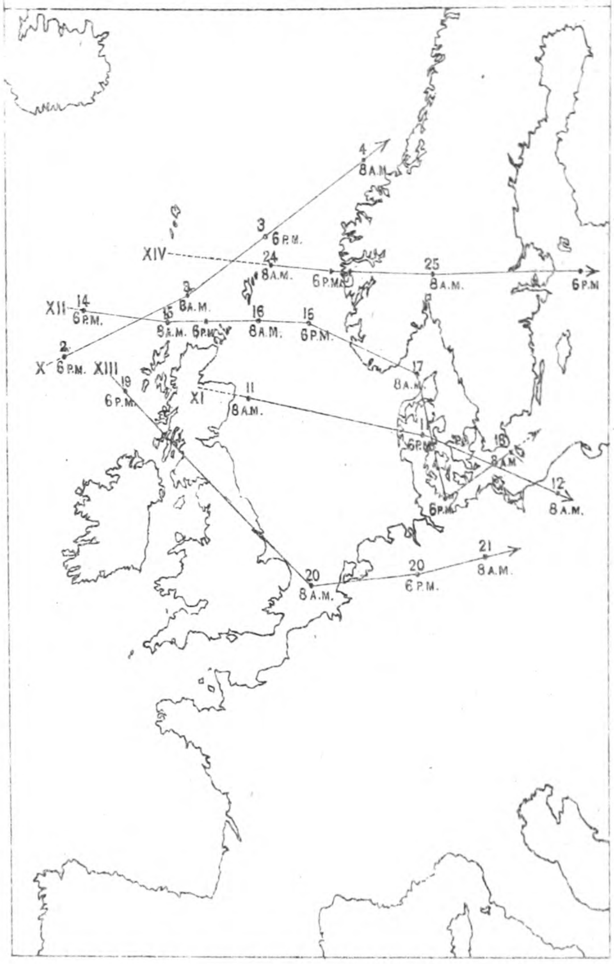
DANGERFIELD LITH 22 BEDFORD S^T COVENT GARDEN

MONTHLY WEATHER CHART, FEBRUARY 1877.

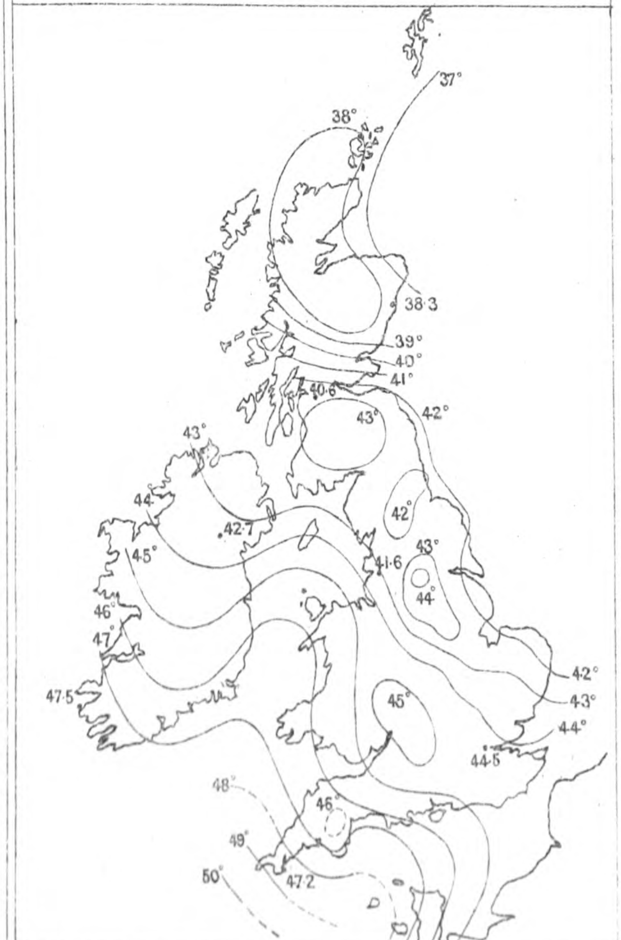
1. DISTRIBUTION OF MEAN PRESSURE


29·50
29·55
29·60
29·668
29·65
29·70
29·736
29·75
29·80
29·871
29·845
29·90
29·85
30·00
30·015
29·943
29·95
30·05
30·069

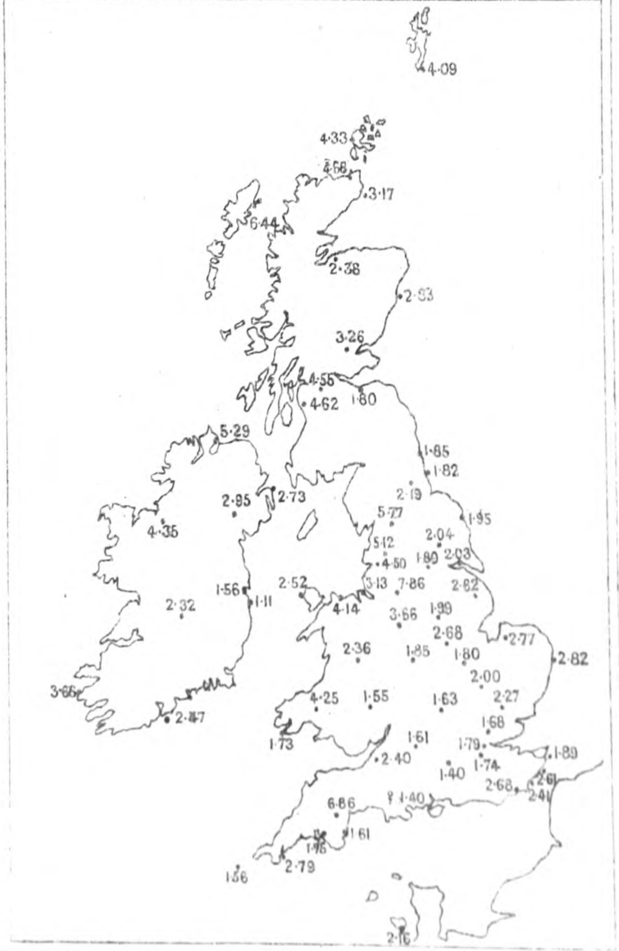
2. MOVEMENTS OF DEPRESSIONS.


4
8 A.M.
3
6 P.M.
XIV
24
8 A.M.
6 P.M.
25
8 A.M.
6 P.M.
3
8 A.M.
XII
14
6 P.M.
15
8 A.M.
6 P.M.
16
8 A.M.
15
6 P.M.
2
X
6 P.M.
XIII
19
6 P.M.
XI
11
8 A.M.
17
8 A.M.
11
6 P.M.
18
8 A.M.
12
8 A.M.
6 P.M.
20
8 A.M.
20
6 P.M.
21
8 A.M.

3. DISTRIBUTION OF MEAN TEMPERATURE.


37°
38°
38·3
39°
40°
41°
40·6
42°
43°
43°
42°
44°
42·7
45°
41·6
43°
44°
46°
47°
47·5
42°
43°
45°
44°
44·5
48°
46°
49°
50°
47·2

4. RAINFALL


4·09
4·33
4·66
3·17
6·44
2·38
2·83
3·26
4·55
4·62
1·80
5·29
1·85
1·82
2·19
2·95
2·73
5·77
1·95
4·35
5·12
2·04
4·50
1·80
2·03
3·13
7·86
2·62
1·56
1·11
2·52
2·32
4·14
3·66
1·99
2·68
2·77
2·36
1·85
1·80
2·82
2·00
3·66
4·25
1·55
1·63
2·27
2·47
1·68
1·73
1·61
1·79
1·89
2·40
1·74
1·40
2·68
2·61
2·41
6·86
1·40
1·61
1·78
1·56
2·79
2·16

To follow Wind Chart for February.

DANGERFIELD LITH 22 BEDFORD ST COVENT GARDEN
6319

REMARKS FOR MARCH 1877.

(*Tables A. to C., March, with Monthly Wind and Weather Charts.*)

Wind.—The Northerly wind with which February closed gave way on the 1st of March and was succeeded by a South-westerly wind during the first few days of the month. The change was, however, only temporary, for on the 4th the direction veered once more to North-west and North, and until the 8th the latter continued to be the prevailing direction. On the 9th a fresh retrograde movement began, resulting in the establishment of another Southerly current—South-west in the north and South-east in the south—over the kingdom; but its duration was again only brief, and two days later it was followed by a shift to the Westward, and for a week Westerly winds—which occasionally veered to North-west, and at times blew with considerable force—prevailed. On the 19th a moderate to fresh North-easterly wind set in over the southern counties, due to a depression which lay over France, but over the northern portions of the British Isles light Westerly airs or calms still continued. Variable airs had become general on the 21st, and were followed a day or two later by fresh Southerly winds on the eastern coasts, and by Westerly and North-westerly winds in the south and west. These gradually backed, so that on the 25th Easterly winds had become general over nearly the whole of the kingdom, but on the 27th a Westerly wind again appeared on the southern and western coasts, and gradually predominated over the Easterly wind, till on the 31st fresh or strong Westerly winds blew all over the country.

The Monthly Chart shows a more equal distribution of wind direction than was the case in the two preceding months. On the whole, however, the Westerly and North-westerly winds predominated, the Easterly and North-easterly directions being more prevalent in the extreme north than at the stations on the mainland farther south.

Pressure.—The mean pressure for the month was decidedly low, the deficiency amounting to nearly two tenths of an inch in the north, and to about a tenth of an inch in the south-west, the mean values ranging from 29·828 inches at Scilly to 29·557 inches at Sumburgh Head. The lowest readings generally occurred during the night of the 24th–25th, with the passage of depression No. XVII., but Aberdeen was an exception to this rule, the lowest point being reached there early on the 16th, when a large area of low pressure lay to the northward of Scotland. The maxima were recorded on the 1st at every observatory except Valencia, at which place a higher reading was attained on the 8th. The greatest range of pressure was 1·706 inches at Falmouth.

Movements of Depressions.—The tracks of the cyclonic systems which reached us during the month were somewhat varied, one or two following the usual path to the north-east, but at some distance to the northward of Scotland, while another, which reached the south-west of France on the 19th, travelled to Holland and filled up there. Early in the month a subsidiary depression passed down our eastern coast to Belgium, and thence travelled south-eastwards to the Mediterranean, and later on a depression, No. XVII., reaching the south-west of Ireland on the 24th, moved slowly over our south-western coasts to Brittany, where it became dispersed.

Temperature.—The distribution and range of mean temperature for the month was normal, the values decreasing from 46° in the south-west of England to 38° over north Scotland. The maxima were, as a rule, below 60°, that point being reached at two stations only, and occurred at most places during the last two or three days of the month; while on the other hand the minima were generally above 20°, although on the 1st of the month the low temperature of 13°·9 was recorded at Hawes, and temperatures below 20° at a few other stations; this was the most general date on which the minima were registered. The range of temperature varied from 19° at Pembroke to 40° at Nottingham, but at the majority of stations it amounted to a little more than 30°.

Vapour Tension.—The mean tension of vapour decreased from about 0·25 inch over the south-western portion of the kingdom, to less than 0·2 inch in the north-east; but *Relative Humidity* was again somewhat irregularly distributed, being lowest, and fairly uniform, over the inland districts, and highest on the Channel, the eastern and the north-western coasts.

Rainfall.—The fall of rain was above the average over the greater part of England, particularly in the south-east and east, but elsewhere it was nearly normal. A heavy fall, upwards of 1·6 inch, occurred at Durham on the 25th, and upwards of an inch fell at Dartmoor, Dublin, and Churchstoke on the 24th; but with these exceptions, the maximum amounts which fell in 24 consecutive hours were less than an inch, and in some instances only amounted to about two-tenths of an inch.

TABLE A., MARCH.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of MARCH 1877; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).						TEMPERATURE In the Shade (In Degrees Fahrenheit).						HYGROMETRIC VALUES.		RAINFALL (In English Inches).
	Mean for the Month.	Extremes.				Range.	Mean for the Month.	Extremes.				Range.	Tension of Vapour (In English Inches).	Relative Humidity (Saturation = 100).	
		Minimum.		Maximum.				Minimum.		Maximum.					
		Reading.	Date.	Reading.	Date.			Reading.	Date.	Reading.	Date.				
			D. H.		D. H.				D. H.		D. H.				
Valencia - -	ins. 29·818	ins. 28·732*	24th, 7 p.m.	ins. 30·306	8th, 11 p.m.	ins. 1·574	45°·4	34°·0	20th, 1 a.m.	55°·7	29th, Noon	21°·7	in. ·249	% 83	ins. 4·705
Armagh - -	55 ·7~~84~~	28·923	24th, 8 p.m.	·329	1st, 1 a.m.	1·406	41·0	29·2	19th, 6 a.m.	55·5	2nd, 1 p.m.	26·3	·219	86	2·810
Glasgow - -	·685	29·090	24th, 3 p.m.	·315	1st, 1 a.m.	1·225	38·6	24·7	1st, 6 a.m.	51·8	2nd, 2 p.m. 3 p.m. 31st, Noon	27·1	·196	84	2·059
Aberdeen - -	·665	29·215	16th, 5 a.m.	·289	1st, 1 a.m.	1·074	37·8	23·8	1st, 6 a.m.	52·4	2nd, 1 p.m.	28·6	·185	82	2·140
Falmouth - -	·825	28·710	25th, 5 a.m.	·416	1st, 1 a.m.	1·706	44·5	33·6	1st, 5 a.m.	55·7	29th, 1 p.m.	22·1	·243	83	3·090
Stonyhurst - -	·727	·919	25th, 4 a.m. 5 a.m.	·385	1st, 1 a.m.	1·466	38·9	16·0*	1st, 7 a.m.	51·7	30th, 1 p.m.	35·7	·198	84	4·788
Kew - -	29·766	28·844	25th, 4 a.m.	30·422	1st, 10 a.m.	1·578	41·1	23·0	23rd, 7 a.m.	56·7	29th, 2 p.m.	33·7	·207	81	2·200

* Approximate reading, trace faint.

TABLE B., MARCH.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not
(The Stations are grouped in Districts, and then arranged in order of

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	AIR TEMPERATURE.									
						Means of			Absolute Extremes.			
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°	°	°		°	
0. SCOTLAND, N.	Sandwick Manse (Orkneys)	29·614	38·5	36·6	37·6	34·2	42·3	38·3	20·9	19th	47·6	10th
1. SCOTLAND, E.	Glenalmond	29·694	37·3	35·2	36·3	29·9	43·8	36·9	15·5	1st	54·5	3rd
2. ENGLAND, N.E.	Seaham	29·685	40·4	38·2	39·3	33·5	46·2	39·9	23·8	1st	56·7	30th
	Durham*	29·687	39·9	36·3	38·1	31·6	45·4	38·5	19·6	1st	57·9	30th
	Hull	29·726	39·8	38·7	39·3	34·1	46·4	40·3	25·0	1st	57·5	26th, 30th
	Kelstern	29·734	37·8	36·7	37·3	32·3	45·5	38·9	18·8	23rd	54·6	28th
3. ENGLAND, E.	Hillington	29·725	39·5	38·2	38·9	33·0	46·9	40·0	22·3	11th	55·3	28th
	Audley End	29·760	40·5	38·6	39·6	33·3	47·1	40·2	22·0	11th	56·0	25th
	Chigwell Row	29·787	39·9	39·9	39·9	34·5	46·2	40·4	24·0	1st	55·0	29th
4. MIDLAND COUNTIES.	Wakefield	29·736	39·5	39·6	39·6	34·2	46·1	40·2	18·1	1st	57·0	30th
	Buxton	29·756	38·1	36·6	37·4	31·5	43·5	37·5	19·0	21st	55·0	3rd
	Cheadle	29·745	37·9	38·0	38·0	32·5	44·7	38·6	22·0	1st	53·9	30th
	Leicester	29·749	39·9	40·7	40·3	34·9	47·5	41·2	22·0	1st	54·7	30th
	Uppingham	29·741	38·7	38·3	38·5	33·6	46·4	40·0	21·4	1st	55·1	30th
	Oscott	29·748	39·0	38·9	39·0	33·7	47·5	40·6	21·3	1st	56·7	28th, 30th
	Churchstoke	29·766	39·1	39·2	39·2	33·6	45·9	39·8	22·8	1st	54·6	2nd, 30th
	Hereford	29·760	41·2	39·9	40·6	34·8	47·6	41·2	21·9	1st	56·9	30th
5. ENGLAND, S.	Marlborough	29·789	40·6	38·9	39·8	33·6	47·9	40·8	20·8	1st	57·8	30th
	Strathfield Turgiss	29·779	41·7	39·5	40·6	33·5	48·6	41·1	21·7	11th	58·7	29th
	Ramsgate	29·743	‡—	—	—	35·9	47·1	41·5	25·7	1st	55·9	29th
	Folkestone	29·762	41·0	39·8	40·4	36·2	46·2	41·2	27·4	1st	56·6	30th
	Hastings	29·780	41·1	40·1	40·6	35·6	46·1	40·9	25·1	1st	53·8	30th
6. SCOTLAND, W.	——	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND N.W.	Hawes	29·729	37·6	36·0	36·8	30·9	42·5	36·7	13·9	1st	52·2	30th
	Prestwich	29·729	38·9	38·7	38·8	33·9	45·6	39·8	17·7	1st	54·4	30th
	Llandudno	29·735	44·2	42·0	43·1	37·2	48·9	43·1	26·3	1st	54·5	29th
8. ENGLAND, S.W.	Caermarthen	29·769	43·9	41·1	42·5	35·7	49·6	42·7	24·4	1st	57·3	13th
	Dartmoor	29·811	38·1	37·1	37·6	32·8	43·1	38·0	24·2	1st	50·6	30th
	Babbacombe	29·802	44·6	41·3	43·0	36·8	50·0	43·4	25·2	1st	61·1	30th
9. IRELAND, N.	Markree Castle	29·763	41·4	40·2	40·8	34·5	49·2	41·9	24·4	19th	57·0	2nd
10. IRELAND, S.	Dublin	29·771	42·0	41·6	41·8	36·7	48·2	42·5	27·9	1st	57·2	13th
	Parsonstown	29·790	42·2	40·2	41·2	34·7	49·6	42·2	24·6	19th	59·1	13th
CHANNEL	Jersey (St. Aubin's)	29·850	45·3	43·0	44·2	39·2	49·1	44·2	31·8	12th	57·7	30th

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* At Durham the observations were taken at 10 a.m. and 10 p.m. each day. † Wind force not recorded; it is probable that

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of MARCH 1877.
corrected for Diurnal Range.
Latitude, beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10.)			RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	%	%	%				ins.	ins.																	
·201	·196	·199	87	91	89	5·6	5·5	5·6	2·810	·360	11th	27	8	2	0	4	6	5	4	5	6	2	7	8	13	10	7
·189	·183	·186	84	88	86	7·2	5·9	6·6	1·990	·450	27th	15	10	2	0	2	14	0	5	.2	8	5	1	5	10	11	15
·218	·212	·215	87	93	90	6·5	4·4	5·5	2·823	·840	25th	20	7	6	1	5	8	0	4	6	5	2	4	6	19	9	7
·209	·192	·201	85	88	87	6·5	5·5	6·0	4·585	1·642	25th	18	6	0	0	3	10	0	4	7	5	3	7	9	11	13	3
·219	·220	·220	90	94	92	6·8	5·4	6·1	2·160	·530	29th	21	2	0	0	5	14	0	2	8	3	6	2	10	7	13	11
·210	·206	·208	91	92	92	6·5	6·0	6·3	2·119	·466	24th	21	7	0	0	3	14	0	4	6	2	4	4	13	15	13	1
·220	·212	·216	89	90	89	8·2	7·0	7·6	1·934	·310	21st	23	6	3	2	0	14	2	6	7	0	9	4	13	6	16	1
·212	·210	·211	82	88	85	6·7	5·3	6·0	2·160	·330	3rd	21	9	2	2	5	11	0	0	4	0	10	5	8	4	26	5
·211	·218	·215	86	89	88	7·7	5·7	6·7	2·210	·250	23rd	21	7	6	1	1	10	0	5	7	2	6	4	13	12	9	4
·213	·216	·215	86	87	87	6·6	6·4	6·5	3·210	·670	24th	18	1	2	1	2	13	0	6	4	4	4	8	6	21	9	0†
·194	·189	·192	83	85	84	7·9	8·0	8·0	3·560	·600	24th	18	6	0	0	0	18	2	7	5	4	2	1	8	12	16	7
·199	·203	·201	87	89	88	6·5	5·8	6·1	3·220	·790	24th	24	5	2	1	4	10	5	4	9	1	7	8	15	1	12	5
·200	·211	·206	81	84	83	6·6	6·7	6·7	1·840	·490	3rd	20	5	0	0	3	13	1	8	5	1	6	4	18	15	5	0
·207	·205	·206	87	86	87	7·5	6·7	7·1	1·724	·294	24th	19	9	5	0	0	14	1	5	4	0	3	5	12	14	13	6
·204	·209	·207	84	87	85	8·0	6·7	7·4	2·060	·480	24th	18	8	5	1	1	17	3	7	4	2	3	13	12	8	11	2
·208	·209	·209	85	86	86	6·0	5·8	5·9	2·049	1·020	24th	21	5	0	0	6	11	0	2	1	1	6	3	10	12	6	21
·212	·213	·213	80	85	83	6·0	5·1	5·6	2·048	·610	24th	22	0	0	1	6	7	0	7	2	1	5	3	0	11	7	26
·212	·213	·213	82	88	85	6·3	6·3	6·3	2·414	·373	23rd	19	5	3	2	5	11	0	8	1	1	3	7	6	20	6	10
·214	·219	·217	79	88	84	5·8	6·4	6·1	2·046	·340	23rd	19	6	0	3	4	12	0	10	5	0	6	2	11	13	10	5
—‡	—	—	—‡	—	—	7·3	6·5	6·9	3·145	·730	20th	21	4	5	0	1	11	6	4	8	2	4	1	21	13	7	2
·229	·228	·229	89	93	91	6·9	5·9	6·4	2·930	·700	20th	22	4	2	0	4	11	0	13	2	4	2	4	9	19	6	5
·218	·222	·220	82	87	85	6·4	5·3	5·9	2·425	·480	20th	22	4	3	0	5	9	1	11	6	2	3	7	8	16	8	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·187	·186	·187	82	86	84	8·1	6·3	7·2	3·820	·400	25th	25	9	5	1	2	14	0	4	1	8	1	0	5	18	6	19
·196	·206	·201	84	88	86	6·9	7·0	7·0	2·968	·630	29th	21	4	3	1	3	14	0	6	6	0	8	6	7	8	7	14
·233	·229	·231	80	86	83	5·9	6·2	6·1	2·620	·370	9th	21	1	4	0	5	11	2	8	1	10	1	1	6	30	5	0
·244	·240	·242	84	92	88	6·3	5·6	6·0	3·890	·790	24th	26	3	4	1	3	10	0	11	2	4	5	2	10	9	6	13
·213	·212	·213	91	93	92	7·8	5·8	6·8	5·140	1·420	24th	23	10	1	1	2	12	4	7	5	2	1	7	4	7	17	12
·234	·228	·231	78	86	82	6·1	5·2	5·7	2·670	·700	24th	22	5	8	1	5	8	1	8	5	1	4	5	11	17	9	2
·232	·220	·226	88	87	88	7·7	6·6	7·2	3·485	·418	24th	28	4	5	0	1	16	0	12	5	2	7	6	9	5	14	2
·229	·226	·228	84	85	84	6·1	4·8	5·5	2·741	1·150	24th	20	4	8	1	2	8	3	4	3	2	4	1	4	22	14	8
·236	·227	·232	87	90	88	6·9	6·5	6·7	2·649	·616	2nd	28	2	1	0	3	14	0	1	2	0	11	3	10	17	9	9
·236	·241	·239	77	85	81	7·1	5·7	6·4	3·296	·603	20th	25	0	11	0	1	10	0	10	4	4	0	8	10	10	9	7

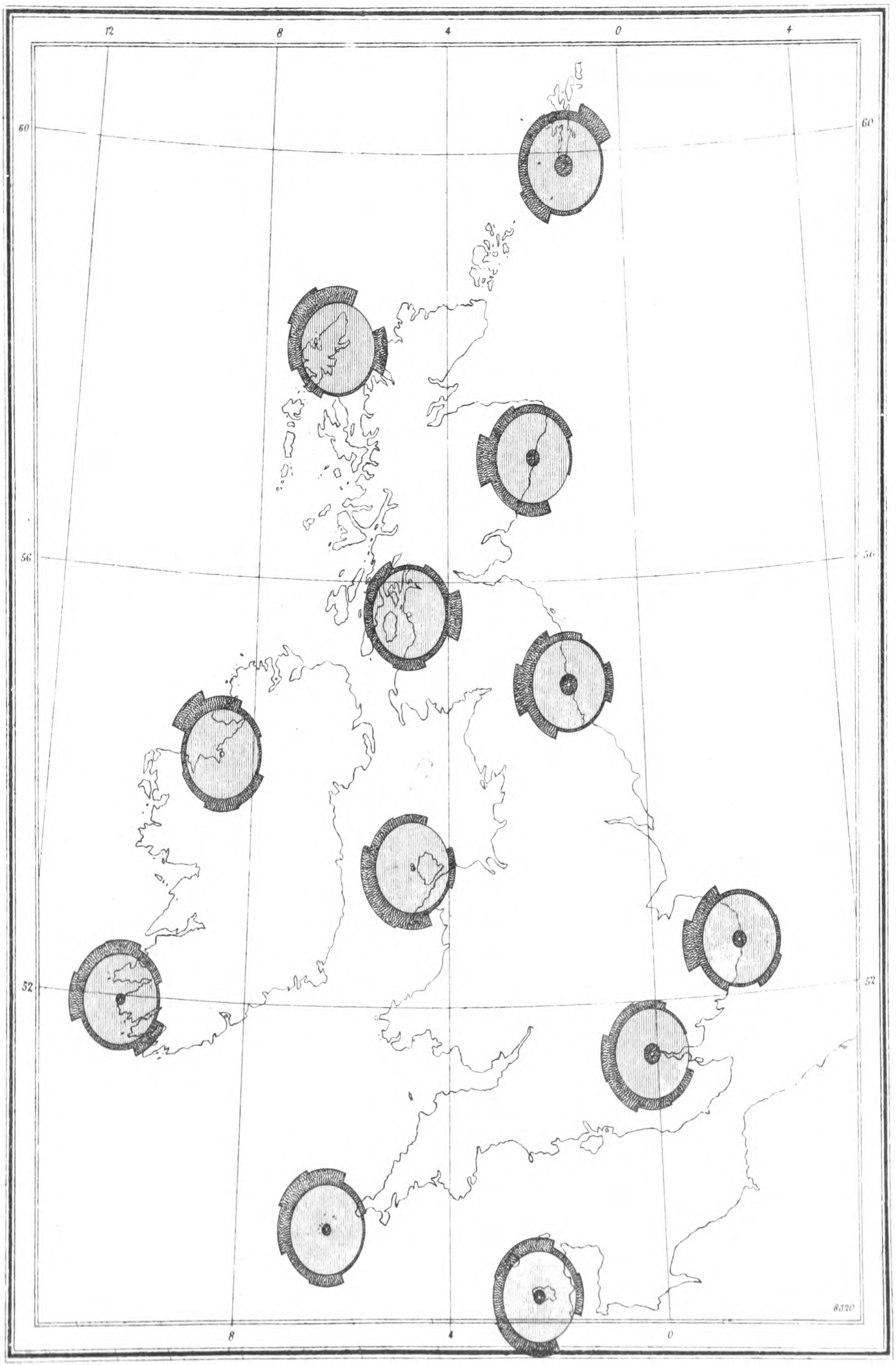
sometimes when there was no wind, the direction of the vane was entered. ‡ Dry bulb and wet bulb observed only on 18 days.

TABLE C., MARCH.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of MARCH 1877. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.								TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of								
				Means of			Absolute Extremes.																									
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
		ins.	°	°	°	°	°		°		in.	%		ins.	ins.																	
0. SCOTLAND, N.	Sumburgh Head	29·557	37·1	32·6	42·6	37·6	25	1st	48	2nd	0·190	86	6·6	2·63	0·35	20th	25	2	1	1	4	11	7	3	7	1	1	2	6	4	4	3
	Thurso	29·598	37·0	33·0	45·4	39·2	22	1st	54	2nd, 3rd	·196	89	7·3	3·59	0·54	14th	28	10	0	0	2	14	3	2	0	1	3	10	3	7	4	1
	Wick	29·610	37·3	32·1	44·5	38·3	25	1st, 19th, 20th.	52	2nd	·188	85	5·7	1·86	0·27	6th	18	5	0	1	10	13	2	1	0	4	1	5	8	5	4	3
	Stornoway	29·629	37·1	32·7	43·8	38·3	21	1st	50	2nd, 9th, 10th, 30th.	·197	89	6·6	3·39	0·46	12th	29	5	4	0	6	12	5	6	0	6	1	1	3	6	8	0
1. SCOTLAND, E.	Nairn	29·634	35·9	32·1	43·4	37·8	21	1st, 2nd,	52	2nd, 10th	·180	85	5·9	1·29	0·19	11th	19	4	0	0	9	12	3	1	2	2	2	0	6	7	1	10
	Aberdeen	29·626	36·4	32·7	44·0	38·4	22	1st	54	2nd	·177	82	3·8	2·17	0·65	26th	22	10	3	0	16	6	4	3	3	1	0	5	4	9	4	2
	Leith	29·662	37·4	32·6	48·1	40·4	22	1st, 2nd	57	2nd	·204	91	7·0	1·30	0·32	27th	14	3	0	0	2	13	1	0	2	3	2	1	6	12	4	1
2. ENGLAND, N.E.	Shields	29·686	37·4	33·5	44·9	39·2	23	1st	55	30th	·191	86	7·6	2·54	0·69	25th	21	8	3	1	5	18	6	3	1	3	1	1	4	9	6	3
	Scarborough	29·697	38·5	34·8	44·0	39·4	26	1st, 2nd	52	14th, 28th, 31st.	·203	87	6·4	1·98	0·54	25th	20	4	5	0	6	11	3	7	1	3	0	2	7	7	4	0
	York	29·717	36·5	32·0	46·8	39·4	21	1st	54	2nd, 14th, 28th, 30th.	·200	93	5·9	2·85	0·91	29th	22	6	1	3	10	14	0	9	0	2	1	5	4	4	6	0
3. ENGLAND, E.	Yarmouth	29·714	38·7	34·7	44·0	39·4	27	23rd	53	14th, 28th	·213	91	6·2	2·52	0·39	24th	25	3	2	0	6	10	3	2	2	2	3	1	3	10	6	2
	Cambridge	29·753	38·0	32·4	49·0	40·7	22	11th	59	28th	·204	89	6·8	1·83	0·26	4th	24	5	2	1	10	19	0	4	2	0	4	4	9	3	5	0
4. MIDLAND COUNTIES.	Nottingham	29·749	38·2	32·6	48·9	40·8	18	1st	58	30th	·197	85	6·4	2·09	0·36	24th	19	5	2	0	10	17	0	7	1	0	1	5	7	3	4	3
	Oxford	29·769	38·3	33·8	47·9	40·9	22	1st	56	28th, 29th, 30th.	·205	89	6·3	1·87	0·35	23rd	17	1	1	1	9	15	0	1	2	0	2	3	4	7	4	8
5. ENGLAND, S.	London	29·765	39·5	34·7	48·5	41·6	22	1st	59	29th	·207	86	5·8	2·53	0·38	23rd, 28th	21	3	0	0	9	12	0	3	1	0	3	4	6	7	4	3
	Dover	29·748	40·3	37·0	45·9	41·5	26	1st	56	30th	·214	86	4·7	2·90	0·63	20th	22	1	1	0	10	5	0	5	3	2	1	1	11	5	3	0
	Hurst Castle	29·783	42·2	36·2	47·4	41·8	25	1st	62	29th	·263	97	6·2	1·51	0·35	23rd	16	1	0	0	7	12	2	3	3	0	4	3	2	6	7	3
6. SCOTLAND, W.	Ardrossan	29·690	39·5	35·8	46·7	41·3	28	1st	53	2nd	·201	83	7·3	2·83	0·52	15th	23	4	2	0	4	16	6	2	3	8	2	4	3	4	5	0
7. ENGLAND, N.W.	Liverpool	29·726	39·1	35·9	46·3	41·1	26	1st	56	29th	·208	87	6·0	2·42	0·37	24th	21	3	2	0	9	12	2	2	1	4	4	1	5	8	4	2
	Holyhead	29·739	42·0	39·1	47·9	43·5	31	1st	54	27th	·233	88	6·9	2·79	0·63	9th	20	3	3	0	3	10	2	3	0	3	1	6	7	7	4	0
8. ENGLAND, S.W.	Pembroke	29·772	42·9	39·5	47·6	43·6	32	20th	51	2nd, 3rd, 13th, 26th, 28th.	·227	83	6·0	3·37	0·76	24th	19	0	0	1	5	12	6	3	4	0	4	2	6	4	8	0
	Portishead	29·773	40·3	34·8	49·5	42·2	24	1st	54	13th, 28th, 30th.	·221	89	5·5	2·15	0·31	23rd	19	0	3	0	6	8	5	3	4	0	2	1	7	8	5	1
	Plymouth	29·806	40·8	36·4	50·5	43·5	27	1st	59	14th, 30th	·237	94	5·6	3·47	0·93	24th	25	1	1	0	11	13	3	5	2	3	0	0	5	4	6	6
9. IRELAND, N.	Greencastle	29·689	39·8	35·4	48·1	41·8	27	17th	56	2nd, 29th	·239	97	8·1	3·64	0·36	23rd	26	3	0	0	3	21	0	5	1	3	2	1	4	10	5	0
	Donaghadee	29·708	39·6	35·6	46·3	41·0	27	1st	53	2nd, 30th	·225	93	5·3	1·99	0·62	23rd	18	0	0	0	12	11	5	2	1	3	1	3	5	10	6	0
10. IRELAND, S.	Kingstown	29·756	41·2	37·4	46·8	42·1	31	1st	55	13th	·219	85	5·9	2·67	0·86	2nd	21	1	1	1	4	3	4	0	1	1	2	6	1	12	7	1
	Roche's Point	29·789	43·6	40·0	50·8	45·4	32	1st, 20th	55	13th, 14th, 28th, 29th, 30th.	·238	84	5·7	3·85	0·85	2nd	18	0	2	0	10	11	2	10	2	0	0	4	5	6	4	0
	Valencia	29·803	44·6	39·6	50·6	45·1	32	20th	56	29th, 30th	·250	85	6·7	4·38	0·65	22nd	23	0	2	1	2	10	6	5	3	1	5	2	2	7	5	1
CHANNEL	Scilly	29·828	47·1	42·7	50·2	46·5	37	18th	57	29th	·272	84	8·3	1·70	0·34	24th	23	0	2	0	0	15	5	6	2	1	1	4	3	6	7	1

MONTHLY WIND CHART FOR MARCH 1877.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8
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4
60
60
56
56
52
52
8320
8
4
0

To face p. 48.

DANGERFIELD LITH. 22 BEDFORD S^T COVENT GARDEN

MONTHLY WEATHER CHART MARCH 1877.

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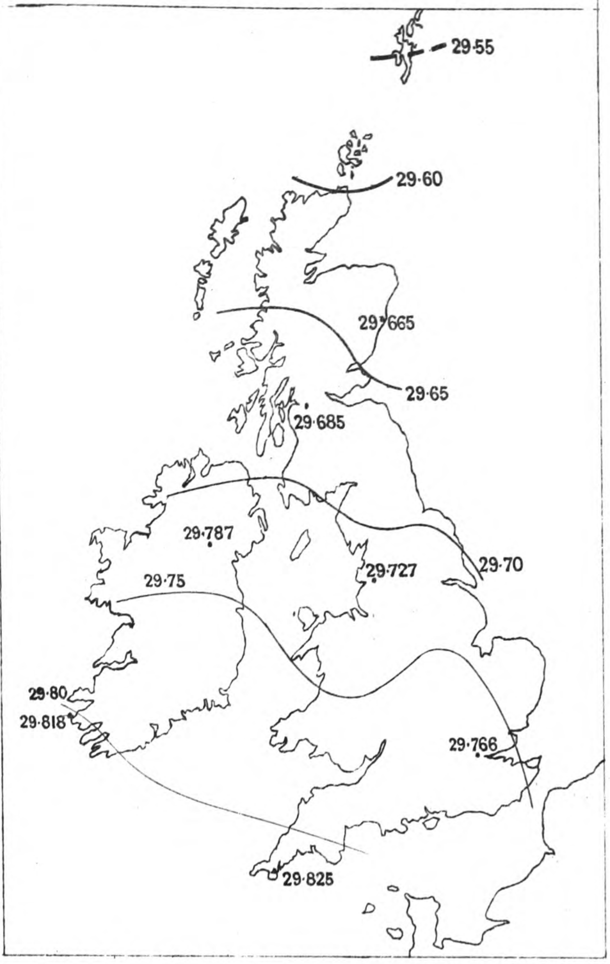
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29·665
29·65
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29·80
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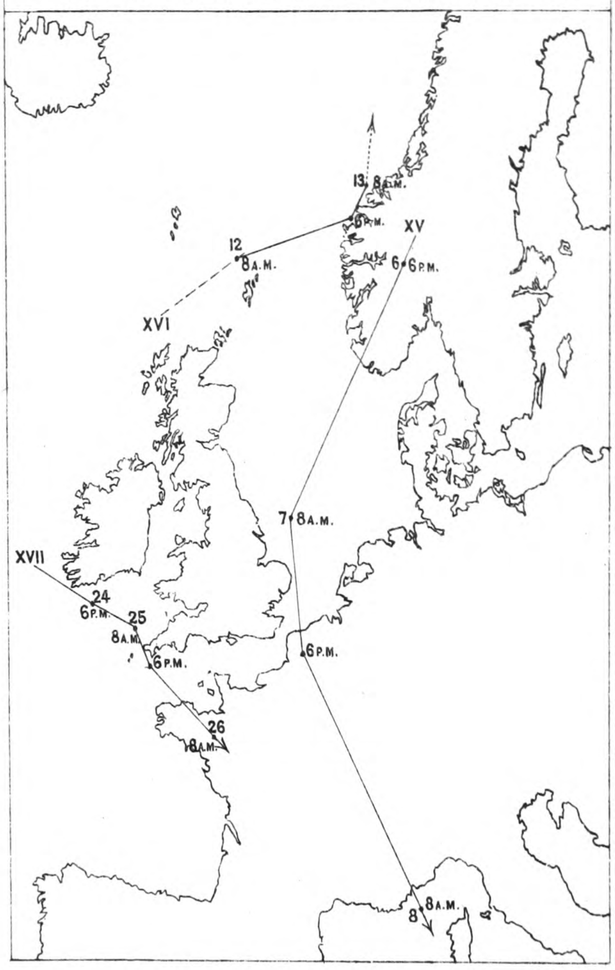
29·766
29·825

2. MOVEMENTS OF DEPRESSIONS.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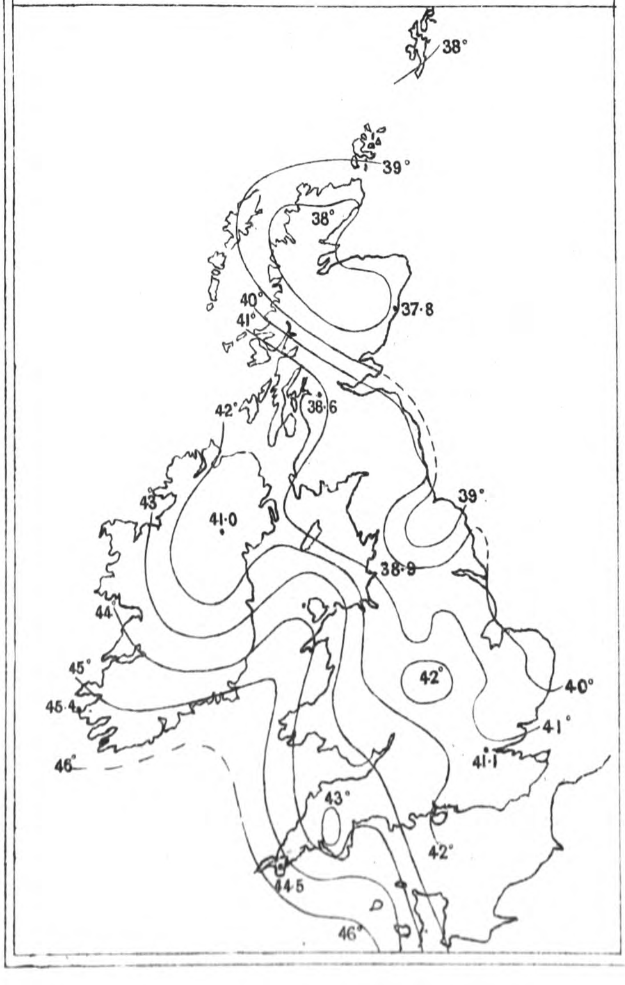
6 P.M.
XV
12
8 A.M.
6. 6 P.M.
XVI
7. 8 A.M.
XVII
24
6 P.M.
25
8 A.M.
6 P.M.
6 P.M.
26
8 A.M.
8
8 A.M.

3. DISTRIBUTION OF MEAN TEMPERATURE.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39°
38°
37·8
40°
41°
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38·6
43°
41·0
39°
38·9
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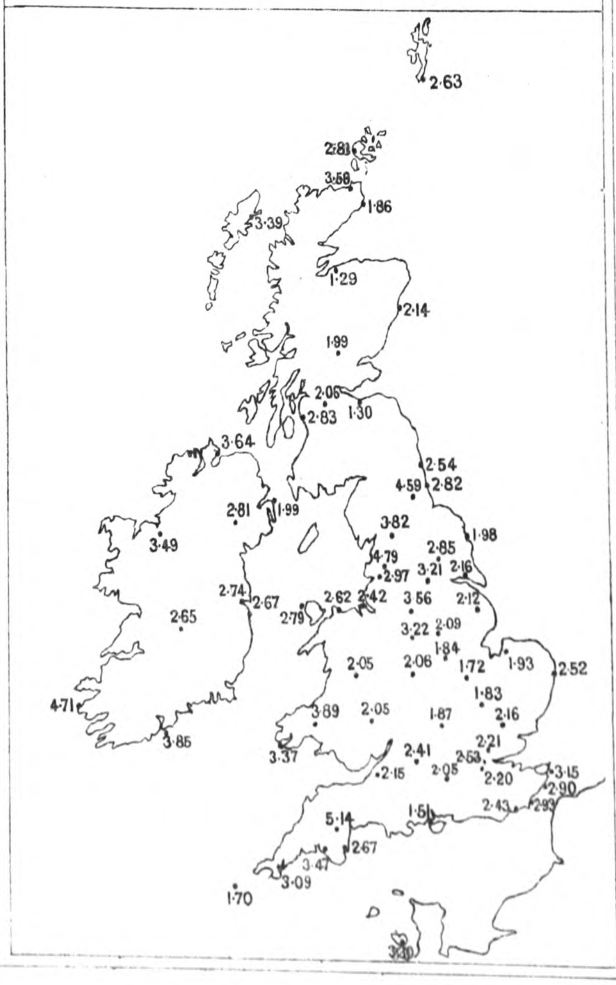
42°
45·4
40°
41°
46°
41·1
43°
42°
44·5
46°

4. RAINFALL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2·81
3·58
1·86
3·39
1·29
2·14
1·99
2·06
2·83
1·30
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4·59
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1·99
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2·85
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2·97
3·21
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2·79
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3·22
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2·06
1·72
1·93
2·52
4·71
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2·05
1·87
1·83
2·16
3·85
3·37
2·41
2·21
2·53
2·15
2·05
2·20
3·15
2·90
2·43
2·93
5·14
1·51
2·67
3·47
3·09
1·70
3·30

To follow Wind Chart for March.

DANGERFIELD LITH. 22 BEDFORD S.T COVENT GARDEN
8320

PART II.

SECTION I.

GENERAL SUMMARY FOR THE QUARTER.

THE weather during the quarter was in no respect very remarkable. The range of barometrical pressure was only moderate, no unusually high or low readings occurring. The first two months were decidedly cold all over the kingdom ; but in June an improvement took place, and not only were high maxima recorded over the midland and south-eastern counties of England, but the average temperature was exceeded in all parts of the country. During April and May there was a marked predominance of Easterly and North-easterly winds, to which fact the low temperature of those months was due, but in June Southerly and South-westerly winds became more prevalent. Depressions were rather frequent in April, but in no case during the quarter were they unusually severe.

April 1st–9th.—At the commencement of the month pressure was relatively high to the south-west of the British Isles, but low over Scandinavia, where lay the centre of a deep depression (No. XVIII.), which at the close of March was advancing from the westward towards Norway. With these conditions moderate North-westerly winds, with dull overcast weather, prevailed over Great Britain and Ireland, while from the eastern shores of the North Sea strong winds and gales were reported. Throughout the 1st the barometer remained tolerably steady, but during the night a brisk fall began in the west, which quickly became general over the British Isles and western France, and continued without interruption till the close of the 3rd, by which time a complete change in the general distribution of pressure over western Europe had been brought about. The depression just referred to had then passed away over Russia and disappeared, and in its rear a rapid recovery of pressure had taken place. At the same time the area of high readings which had existed over the ocean, to the south-west of our Islands, had given way, and had been succeeded by a large depression, No. XIX., the well-defined centre of which lay over Saint George's Channel, whilst the highest pressures were found over the Baltic and south-western Russia.

During the night the new depression moved in a northerly direction (its further eastward progress being barred by the high pressure on the Continent) ; the wind *veered* over England and Scotland, and *backed* in Ireland, while the barometer rose at most stations, but especially in the north. This rise, however, was of very brief duration, for by the morning of the 4th a new disturbance had reached the entrance to the Channel, and extending northward caused the barometer to fall again at all stations, so that by the close of the day a large area of uniformly low pressure had spread itself over the greater part of the kingdom. The winds, however, at this time were not strong, but the weather was warm and unsettled, and during the afternoon of the 4th a very severe thunderstorm passed over central France and the east of England, accompanied by a considerable fall in temperature in those districts.

During the next four or five days the general distribution of pressure underwent but little change. On the 5th the barometer rose in all parts of the kingdom, and in the north of Scotland it continued to do so until the close of the 9th, although elsewhere it changed but little after the 7th. On the 8th pressure began to give way over southern

Europe, and at the same time to increase over Scandinavia, while the wind gradually backed, until at the close of the 9th Easterly winds had become general.

April 10th–13th.—The area of low pressure now extended itself eastward, and a broad band of low readings (29·5 ins.) was formed, which stretched from Ireland to the Netherlands; the highest readings, however, remained over Finland, and rather steep gradients, with strong Easterly winds, continued in the north, while in the south the winds were lighter in force and somewhat variable in direction. In Scotland the barometer fell decidedly during the first part of the 10th, but at the close of that day it had begun to rise again there, and also over England and Ireland, and during the next three days an area of relatively high readings became developed over the British Isles. At the same time the centre of an area of low pressure (No. XX.), which lay over Denmark on the morning of the 11th, travelled in a north-easterly direction towards Lapland, where it disappeared on the 13th, by which time pressure had become very uniform over the whole of western Europe; with these changes the wind at first backed to the Northward, then veered again very generally to South-east, and on the 13th became light and variable.

April 14th–19th.—The uniform distribution of pressure did not continue long. As depression No. XX. passed northward, the barometer rapidly rose again over Scandinavia, and by the evening of the 14th a well-defined anticyclone had become established over Denmark and the southern part of Sweden and Norway. Simultaneously with this increase of pressure in the north, the barometer gave way again in the west of Ireland, and early on the 15th the fall had become general over our Islands, while the wind had veered to South, and on the western and northern coasts had increased to a gale, accompanied by a considerable rise of temperature over Scotland. The mercury continued to fall till the 16th, by which time the centre of depression No. XXI. had reached our south-west coasts, and—gradients being very steep—the wind blew violently from South-east in all parts of the kingdom, but especially on the north-eastern coasts, with heavy rain in the west and south-west. The disturbance then travelled in a south-easterly direction to the neighbourhood of Rochefort, where it was shown on the morning of the 17th, and thence across central France to Switzerland, disappearing eventually over southern Europe on the 19th. In the meantime a recovery of pressure had been taking place over Great Britain, accompanied by a retrograde movement of the wind to North-east, and by 6 p.m. on the 19th readings had again become uniform, and winds light, over the kingdom generally.

April 20th–23rd.—A band of high and uniform pressure now stretched in a south-westerly direction from Norway to the mouth of the English Channel, and as a consequence, light winds, with generally fine weather, prevailed over Great Britain. Over Scandinavia the barometer was rising again very briskly—after having fallen somewhat over northern Europe during the past few days—and readings of upwards of 30·5 inches were reported from the north-east of Sweden. Another depression was, however, approaching our western coasts, and in consequence a fall of the barometer had set in at Valencia, which in the course of the day extended to all our stations. During the next three days a belt of low pressure spread itself across the British Isles, strong Southerly and South-easterly winds and gales prevailing on the northern and eastern, and fresh Westerly and North-westerly winds on the southern and western coasts, with cold and showery weather.

April 24th–30th.—The area of lowest pressure now moved to the Bay of Biscay, and except in the south-west of Ireland, the barometer rose again all over the kingdom, the wind continuing to blow from the Eastward, although with greatly reduced force. On the 25th a rather brisk decrease of pressure occurred in the south-west of France, which resulted in the extension of the Easterly current to the French coast, but beyond this very little change occurred till the 27th, when a fresh, but slight, fall of the barometer took place at our stations, and, gradients becoming rather steeper, the strength of the wind increased to a gale at the mouth of the Channel. During the day a small depression travelled eastwards across France to central Europe, and with this there commenced over Great Britain a general increase of pressure, which continued till the close of the month. Simultaneously, the barometer gave way over Scandinavia, and by the 30th the area of highest readings which had so persistently remained in that region, had become transferred to our north-western coasts, while a new and deep disturbance had appeared in the north of Sweden. Northerly winds were then blowing over western Europe generally; on our coasts they were moderate in force, with cold weather in Scotland, but in the west of Norway and in Denmark they were strong, and in places amounted to a gale.

May 1st–7th.—Throughout the whole of this period the highest barometer readings were found over the British Isles, the Netherlands, and Germany; and Northerly and Easterly winds, with cold but fine weather, prevailed generally. The barometer, however, fell slowly, but steadily, at all our stations, and therefore, whilst readings of upwards of 30·4 inches were recorded on our north-west coasts on the 1st, the highest reading reported from any part of western Europe on the 7th—although at that time a band of relatively high pressure extended from Ireland to North Germany—was only 29·9 inches. During the interval a couple of unimportant depressions were observed over the northern part of Scandinavia, and towards its close, pressure having given way briskly in the south-west of France, a shallow depression reached the neighbourhood of Biarritz, where it gradually filled up. At the close of the 7th, the barometer had begun to fall in the south-west of Ireland, but remained tolerably steady in other parts of the kingdom; and gradients being slight, the winds were nowhere strong.

May 8th–16th.—The decrease of pressure in the south-west of Ireland extended to England, but not to the northern portion of Scotland, and preceded the approach of depression No. XXIII., which reached our south-west coasts early on the 9th. By that time gradients had been rendered steeper by the barometer having risen over Scandinavia, and consequently fresh or strong Easterly winds blew over England and Scotland, and Westerly winds on the western coasts of France. Although the centre of this disturbance moved but very little, the area of low pressure gradually extended eastward, and at 8 a.m. on the 11th a band of uniformly low readings stretched along the Channel to the Continent. For some time after this the distribution of pressure underwent no material change, and the two areas of relatively high pressure continued to exist, over Scandinavia and the south of France respectively. The barometer fell in the west during the night of the 13th, owing to the approach of a depression towards that coast, and upon its arrival the wind became Southerly over England, although it continued Easterly in Scotland. Pressure then increased very briskly in the south of France and over the Peninsula, and, to a less extent, over the whole of western Europe, and on the morning of the 16th a well-defined area of high pressure had become developed over France; the barometer, however, was then rising still more briskly over Scandinavia, and thus at the close of the day, while readings were generally high over the Continent they were highest over the Gulf of Bothnia, and lowest over the ocean to the west of Ireland.

May 17th–19th.—A smart decrease of pressure now took place in the south-west, and at 8 a.m. a large and moderately deep depression, travelling from the westward, had reached the mouth of the Channel, where the wind was blowing rather strongly; the centre then moved northwards and on the following morning it lay over the north of Scotland, fresh Westerly winds blowing over England and Ireland, and a strong North-easterly wind at the Shetlands. The barometer rose briskly in the south-west, but only slightly elsewhere, and during the 18th, the position of the disturbance remaining almost unchanged, the mercury was nearly stationary at the northern stations. On the following night, however, the depression returned again in a south-easterly direction, and reached Belgium by the evening of the 19th, at which time the wind had become Northerly all over the British Isles, Easterly on the eastern shores of the North Sea, and North-westerly in the Bay of Biscay, while the barometer was rising all over Great Britain, but particularly over the northern portion.

May 20th–30th.—The depression just noticed continued its course across southern Europe towards the Black Sea, and simultaneously the area of highest pressure became transferred to our north-west coasts, readings above 30·5 inches being reported from the Hebrides during the 21st. The wind was generally Northerly—drawing into East over Scandinavia, and into West in the south of France—with low temperature and fine weather. These conditions continued with little change until the close of the 25th; the barometer had then fallen slightly in the north, and the area of highest pressure had gradually moved southward, as far as the entrance to the Channel. Early on the 26th, however, a sharp and general decline of pressure began in all parts of the kingdom, and continued without interruption until the 28th, the wind backing and increasing in force, until on the evening of the 27th it blew a strong Southerly gale on all the western coasts. The very deep depression (No. XXV.) whose approach was thus indicated arrived near the north of Ireland on the morning of the 28th, and continuing to travel northwards, passed over the north of Scotland during the day; its passage was accompanied by a general veering of the wind to West, from which quarter it continued to blow freshly until the 30th, the barometer during most of the interval rising in the north, but remaining steady in the south and west after the 28th. From the 27th the highest readings were located over south-eastern Europe.

May 31st–June 2nd.—The close of May was marked by a fresh decrease of pressure and by the arrival on our south-western coasts of a new depression (No. XXVI.). On the morning of the 31st, the wind had in most places fallen light, and it was Easterly over the midland and northern portions of the kingdom, and South-easterly in the Channel; on the western French coasts, however, it blew freshly from West.

During the day the barometer fell briskly in the south and west, but rose somewhat in the north and east, and in the evening, by which time the wind had veered to South at the south-western stations, and was blowing a strong gale at the mouth of the Channel, the centre of the depression, which was moderately deep, reached the neighbourhood of Valencia, but lay to the southward of that station. It continued to advance throughout the night, and at 8 a.m. next morning lay over Saint George's Channel, bringing strong Westerly and Southerly gales to the Channel coasts and the southern portion of England, while fresh or moderate Southerly and South-easterly winds blew over the remainder of Great Britain, and North-westerly winds in the south-west of Ireland.

The disturbance then travelled away northward, pressure giving way in its front while it rose rapidly in the south and west, and by the close of the 1st the centre had arrived upon the north-west coast of Scotland, whence it disappeared again over the ocean. The highest pressures were still found over south-eastern France, and as gradients remained rather steep, the wind, which had become generally South-westerly, continued to blow freshly in all parts of the kingdom.

June 3rd–10th.—The area of high pressure now moved northwards to central Europe, but as a large belt of low pressure continued to lie to the west and north-west of the British Isles, rather steep gradients for Southerly winds prevailed, and temperature rose considerably in the south-east of England. A moderately deep depression (No. XXVII.) passed quickly along the western coasts during the night of the 4th, and caused a hard gale to blow at the mouth of the Channel, but by mid-day on the 5th it had passed to the northward of Scotland, and pressure was again increasing in all parts of the kingdom. Simultaneously there appeared over the Peninsula a second area of high pressure, which during the next two days extended itself north-eastwards over France, until it became merged in the system already existing over central Europe. The barometer fluctuated somewhat over these Islands as one or two unimportant depressions travelled past the northern coasts, but, upon the whole, it rose, and at the close of the 10th moderate gradients for Westerly winds had become established, the lowest pressures lying to the northward of Scotland, while a large area of high and uniform pressure lay over southern and central Europe, and extended from the Bay of Biscay to Austria.

June 11th–12th.—On the afternoon of the 11th a fall of the barometer commenced in the south-west of England, which in the course of a few hours extended to the other English stations, and was accompanied by thunderstorms over the central and south-eastern parts of the country. It was caused by the approach of a large, but very shallow, area of relatively low pressure, which spread over the whole of France and reached as far as southern England. At the same time a deeper depression showed itself over Scandinavia, but neither of the two affected to any appreciable degree the barometric gradients over Great Britain, where at the close of the 12th pressure was again increasing generally. The highest readings were, however, no longer found on the Continent, but over the British Isles, where light Easterly and North-easterly winds prevailed, and caused a rapid fall in temperature over the south-eastern counties, where for some days past it had continued very high.

June 13th–21st.—During the whole of this interval the variations of the barometer over Great Britain were but slight, and pressure remained high, and its distribution very uniform over the whole of north-western Europe. At first the maximum readings were found over the British Isles, but pressure increasing over the eastern shores of the North Sea, they gradually shifted eastward, and on the 16th were located over southern Scandinavia, Denmark, and North Germany. The barometer, however, soon fell again in that region, and by the close of the 18th the highest pressures had once more shifted westward, and lay over the ocean to the northward of Scotland, where they continued till the morning of the 21st, at which time pressure was again decreasing all over the kingdom.

Throughout the whole time Easterly winds, which were generally light or moderate in force, prevailed; during the first few days they drew into South-east on the south-western coasts, and towards the close of the period into North-east on the northern coasts. The weather remained fine, and over central and south-eastern England temperature was high.

June 22nd–30th.—The distribution of pressure now underwent a complete change. A large, but shallow, depression reached our Islands, travelling in a north-easterly direction to Scandinavia, and the fall of the barometer spread over the whole of central and north-western Europe. The wind over the greater portion of the British Isles had become Westerly, although in the north of Scotland it still blew strongly from North-east; but as the depression passed eastward Northerly winds became general on all our coasts. During the 23rd the system, which had become somewhat deeper, moved across Sweden to the Gulf of Bothnia, and over the United Kingdom and the south-western portion of the Continent, a brisk increase of pressure went on, which resulted by the following day in the formation of an anticyclonic system over the Bay of Biscay, and at the mouth of the Channel, where it continued during the remainder of the month.

Some small depressions travelled during the next few days in a north-easterly direction towards Scandinavia, and caused some slight oscillations of the barometer at our northern stations, but their path lay too far to the northward for them to materially influence the wind-force in these islands, although upon their approach the direction generally backed to South-west,—particularly at the north-western stations,—and then, as they passed away, veered again to West, which, with the development of the anticyclone in the south-west, had become the prevailing direction. The weather was generally fine, although a good deal of rain fell in the north and west during the early part of the period, and temperature gradually rose till, during the last two or three days, maxima exceeding 80° were reached over the central and south-eastern parts of England.

SECTION II.

TABLE OF CYCLONIC SYSTEMS—MARCH-APRIL, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XVIII. March 30–April 2.	No. XIX. April 3-4.	No. XX. April 11-13.
Form	Oval	Somewhat circular	Circular
Size	Large	Large	Large
Depth	Deep	Moderate	At first shallow, then moderate
Where first Observed	To the northward of Scotland	To the south-west of the British Isles	Over north Germany and Denmark
Direction of Motion	At first easterly, then south-easterly	North-easterly and northerly	North-easterly
Rate of Motion	Very slow	Moderate	Slow
Regions passed over by Steepest Gradients.	The North Sea and the southern part of Scandinavia.	England and the north of France	Sweden
Termination	Travelled away over Russia	Disappeared to the northward of our Islands.	Disappeared over Lapland
Time under Observation	Nearly four days	One day	Two and a half days
Accompanying Winds	North-westerly in Scotland, Westerly in Denmark, and Southerly in the Baltic.	North-easterly and Northerly in Ireland, Westerly at mouth of the Channel, and Southerly to South-easterly in England and Scotland.	North-easterly and Northerly, but not strong.
„ **Weather**	Very unsettled, dull, and showery	Very cloudy and wet	Cloudy and unsettled. Very cold in North Scotland. A sharp thunder-storm in southern England on afternoon of 11th.
„ **Rainfall**	Slight, but general	Very general; rather heavy at some of the northern and north-western stations.	Very general, but heaviest in the north and north-east. Heavy snow in Scotland on 11th.
REMARKS	This system was followed on the 2nd by another, which keeping to the northward of Great Britain, merely skirted the Scotch coast. Particulars as to its size and shape cannot therefore be given, but its effect upon the wind over the British Isles was very slight.	A large area of low pressure continued to exist to the westward of Great Britain for several days, during which time some small disturbances, whose eastward progress was barred by an area of high pressure on the Continent, passed northward along our coast. Eventually the high readings gave way, and the low pressure then extended eastward across the North Sea.	This depression was apparently developed in a large but shallow band of low pressure, which had passed across the British Isles to the Continent. It had but little effect in strengthening the winds over Great Britain. During its progress up the Baltic it grew considerably deeper, and the barometer was lower in the neighbourhood of its centre on the morning of the 13th, as it was passing beyond the limits of our area, than it had previously been during its history.

TABLE OF CYCLONIC SYSTEMS—APRIL-MAY, 1877.

No. XXI. **April 16-20.**	No. XXII. **April 21-23.**	No. XXIII. **May 8-11.**	No. XXIV. **May 17-19.**
Elongated	Irregular, but somewhat elongated	Somewhat circular, but rather irregular at times.	Oval.
Large	Large	Large	Large.
Moderate	Shallow	Shallow	Moderate.
Off the south-west of Ireland	Over north-western Ireland	To the south-west of Ireland	Over St. George's Channel.
South-easterly	South-easterly	Easterly	At first north-easterly, then south-easterly.
Slow	Very slow	Very slow	Moderate.
Ireland, south England, and northern France.	England and Wales	Ireland and south-west of England	England and Ireland.
Travelled across France and disappeared over the Adriatic.	Dispersed over the south of England	Filled up over southern England	Became filled up over southern Europe.
About four and a half days	Two and a half days	About three days	Three days.
Fresh to strong South-easterly winds generally, backing to East and North-east over England and Ireland.	Westerly in the south-west and Southerly and South-easterly in the east and north.	Easterly in the north; Southerly backing to East over Ireland and England; South-westerly and Westerly in the Channel and west of France.	At first South-easterly, veering to West as the centre moved northwards, and to North as it returned again to the south-east.
Stormy and unsettled near the centre of the depression, elsewhere fine and dry.	Cool and wet generally. A thunderstorm over central England on the 22nd.	Overcast, or very cloudy, and damp	Cool, dull, and rainy; sky clearing as the depression passed away.
Very heavy in the west and south-west on the 15th.	Very general, but heaviest on our north-east coasts.	General, but not heavy	Very general, the heaviest falls occurring in the track of the centre.
The centre of this disturbance reached the south of Ireland very early on the 16th, and disappeared over the Adriatic on the morning of the 20th. With its advance eastward the high pressure existing over Scandinavia gave way.	The eastward progress of this system was arrested by the high pressure on the Continent, and after slowly extending itself over southern England, it became filled up.	On reaching our coasts this depression remained for a short time nearly stationary, after which it spread itself eastward, and at the same time became partially filled up; in the northern portion of the kingdom the barometer was scarcely affected. Another system reached our coasts on the 13th, and next day became merged in the belt of low pressure which then existed over Great Britain.	On the arrival of this system pressure was high over nearly the whole of western Continental Europe, and thus its eastern progress was quite barred; by the time, however, that its centre had reached the north of Scotland, although the barometer still remained high in the north and in the south, it had given way over the central portion of the Continent, and the depression was thus enabled to return, to some extent upon itself, and travel south-eastward between the two ridges of high pressure.

TABLE OF CYCLONIC SYSTEMS—MAY–JUNE, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XXV. May 27-30.	No. XXVI. May 31-June 2.	No. XXVII. June 4-5.	No. XXVIII. June 22-24.
Form	Not known	Elongated	Circular	Somewhat circular.
Size	Very large	Large	Large	Very large.
Depth	Deep	Moderate	Shallow	Shallow, deepening to moderate.
Where first Observed	Off the north of Ireland	To the south-west of the British Isles.	Off the south-west coast of Ireland.	Over the British Isles.
Direction of Motion	Northerly	North-north-easterly	North-north-easterly	North-easterly.
Rate of Motion	Slow	Moderate	Moderate	Moderate.
Regions passed over by Steepest Gradients.	United Kingdom and Scandinavia.	The English Channel	Ireland and northern portion of England.	Great Britain.
Termination	Disappeared over the ocean to the northward of Great Britain.	Travelled away to the northward of Scotland.	Disappeared over the North Atlantic.	Disappeared over Lapland.
Time under Observation	Four days	About two days	Two days	Two days and a half.
Accompanying Winds	South and South-west, veering to West; strong to a gale generally.	South-easterly, veering to West; very strong in the Channel.	Westerly and Southerly winds, strong to a gale.	South-easterly veering to West, North-west, and North; fresh.
„ **Weather**	Cloudy, wet, and squally	Very cloudy, showery, and unsettled, with thunder and lightning in several places.	Cloudy, squally, and wet, then clear. Warm in Scandinavia, cool over British Isles. Thunder and lightning very general.	Very cloudy and wet; cool for the time of year.
„ **Rainfall**	Very general, and on the 27th rather heavy. Afterwards the amount was small.	Very general, but heaviest in the south of Ireland.	Very general; heavy in the south of Ireland.	Very general, but heaviest in north Scotland and north-western Europe.
REMARKS	After the main portion of this depression had passed away to the northward, a small secondary appeared over the north-east of Scotland, and remained there during a part of the 30th; it had, however, quite disappeared by the following day.	The centre of this depression reached St. George's Channel on the evening of the 31st, and passed away to the northward of Scotland during the 2nd June. It formed one of a series which skirted the high pressure existing at this time on the Continent. It was followed on the 3rd by another, which, however, passed too far to the westward to allow of particulars as to its size, &c. being ascertained.	Simultaneously with the passage of this depression the high-pressure system on the Continent underwent a considerable extension, and the barometer began to recover itself over Great Britain. Some unimportant depressions, however, continued to pass at some distance from our Islands, and under their influence some small temporary oscillations of the barometer took place, but it was mainly the northern stations which were affected.	The passage of this depression was followed by the development of an anticyclone to the south-west of England, which continued till the end of the month. One or two areas of low pressure travelled eastward, to the northward of Scotland, and slightly influenced the barometer in that part of the kingdom, but they passed at too great a distance to materially affect the wind or weather of the British Islands.

TABLES OF GALES.

No. 16. (Cyclonic System No. XXI.)

Stations.	Velocity 30–40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
April 14–19, 1877.													
Sandwick	Noon (14th).	S.E.byS.	9 p.m. (14th).	S.E. by S.	49	50	4 a.m. (17th).	S.E. by S.	64	10 a.m. (15th).	S.E. by S.	65	—
			2 a.m. (17th).	S E. by S.	41	1							
Aberdeen.	5 a.m. (15th).	S.S.E.	1 p.m. (15th).	S.S.E.	42	1	Mdt. (16th).	S.S.E.	43	11 a.m. (16th).	S.S.E.	45	30 miles were also recorded at Midnight, 14th.
			6 a.m. (16th).	S.S.E.	42	9							
Alnwick Castle.	1 a.m. (15th).	S.S.E.	—	—	—	—	5 a.m. (15th).	S. by E.	4	3 a.m. (15th).	S.S.E.	34	
	7 a.m. (15th).	S.S.E.	Noon (15th).	S.S.E.	42	3	10 a.m. (16th).	S.E. by S.	27	2 p.m. (15th).	S.S.E.	45	—
			5 p.m. (15th).	S.S.E.	40	1							
			6 a.m. (16th).	S.E. by S.	41	1							
	—	—	11 a.m. (16th).	S.E. by S.	41	1	8 p.m. (16th).	S.E.	9	11 a.m. (16th).	S.E. by S.	41	—
Seaham.	Midt. (15th).	S.E.	5 a.m. (16th).	S.E.	41	1	11 a.m. (16th).	S.E. by E.	11	5 a.m. (16th).	S.E.	41	—
			10 a.m. (16th).	S.E. by E.	40	1							
	Noon (16th).	S.E. by E.	—	—	—	—	10 p.m. (16th).	E.S.E.	10	Noon and 1 p.m. (16th).	S.E. by E.	37	—
Stonyhurst.	10 a.m. (16th).	E.S.E.	—	—	—	—	7 p.m. (16th).	E. by N.	9	6 p.m. (16th).	E.	37	Wind slightly exceeded 30 miles at 2, 3, and 4 a.m. 16th.
Holyhead.	9 a.m. (15th).	S.S.E.	11 a.m. (15th).	S.S.E.	40	1	8 p.m. (15th).	S.S.E.	11	1 p.m. (15th).	S.S.E.	41	—
			1 p.m. (15th).	S.S.E.	41	1							
			4 p.m. (15th).	S.S.E.	40	2							
	10 p.m. (15th).	S.E.b.S.	1 a.m. (16th).	S.E.	44	4	2 p.m. (16th).	E.S.E.	16	6 a.m. (16th).	S.E. by E.	49	—
			6 a.m. (16th).	S.E. by E.	43	4							
	3 p.m. (16th).	E. by S.	4 p.m. (16th).	E. by S.	51	10	5 a.m. (17th).	E. by S.	14	11 p.m. (16th).	E.S.E.	56	—
	7 a.m. (17th).	E.	10 a.m. (17th).	E.	41	7	8 p.m. (17th).	E.	13	2 p.m. (17th).	E. by N.	43	—
Armagh	3 a.m. (15th).	S.E. by S.	3 p.m. (15th).	S.E.	41	1	10 p.m. (15th).	S.E. by E.	19	3 p.m. (15th).	S.E.	41	Wind again rose to 30 miles at 7 a.m. and 7 and 8 p.m. on the 16th, and at 1 a.m. on 17th.
Valencia.	Noon (14th).	S.E. by E.	—	—	—	—	4 p.m. (14th).	S.E.	4	1 p.m. (14th).	S.E. by E.	34	—
										2 p.m. (14th).	S.E.		
	8 p.m. (14th).	S.E.	11 p.m. (14th).	S.E. by S.	43	7	8 a.m. (15th).	S.E. by S.	12	4 a.m. (15th).	S.E.	46	—
	2 p.m. (16th).	E.S.E.	6 p.m. (16th).	E. by N.	41	3	6 a.m. (17th).	E. by N.	16	11 p.m. (16th).	E. by N.	44	Wind exceeded 30 miles at 7 and 8 a.m. 16th, and 37 miles were recorded at 7 a.m 17th.
			10 p.m. (16th).	E. by N.	43	2							

(*Table continued on next page.*)

No. 16 (*continued*). (CYCLONIC SYSTEM, No. XXI.)

Stations.	VELOCITY 30-40 Miles per Hour.		VELOCITY. Exceeding 40 Miles per Hour.				VELOCITY Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	MAXIMUM VELOCITY.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
April 14-19, 1877.													
Falmouth.	9 a.m. (15th).	S.S.E.	7 p.m. (15th).	S.E. by S.	40	1	2 a.m. (16th).	S.S.E.	17	1 a.m. (16th).	S.E. by S.	43	—
			Midt. (15th).	S.E. by S.	42	2							
	1 p.m. (16th).	E.S.E.	4 p.m. (16th).	E. by S.	46	20	5 p.m. (17th).	N.E. by N.	28	4 a.m. (17th).	N.E. by E.	50	—
Kew	8 a.m. (16th).	E. by S.	Noon (16th).	E.	45	7	7 p.m. (17th).	N.E.	35	2 p.m. (16th).	E. by N.	48	—
			8 a.m. (17th).	E.N.E.	44	6				4 p.m. (16th).	E.		
Yarmouth.	10 p.m. (14th).	E.S.E.	2 p.m. (15th).	S.E. by E.	51	77	11 a.m. (19th).	E.N.E.	109	Mid. (16th).	E.	63	The velocity slightly exceeded 30 miles at noon, and 1 p.m. on the 19th.
			8 p.m. (18th).	E.N.E.	43	6							
			3 a.m. (19th).	E.N.E.	41	1							
			7 a.m. (19th).	E. by N.	43	1							

No. 17. (CYCLONIC SYSTEM, No. XXV.)

Stations.	VELOCITY 30-40 Miles per Hour.		VELOCITY. Exceeding 40 Miles per Hour.				VELOCITY Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	MAXIMUM VELOCITY.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
May 26-30, 1877.													
Sandwick	2 a.m. (29th).	W.S.W.	—	—	—	—	7 a.m. (29th).	S.W. by W.	5	2 and 3 a.m. (29th).	W.S.W.	35	—
Aberdeen	11 a.m. (29th).	S.S.W.	—	—	—	—	2 p.m. (29th).	S.W.	3	11 a.m. and Noon (29th).	S.S.W.	32	—
Glasgow	6 a.m. (29th).	S.W.	—	—	—	—	7 p.m. (29th).	S.W.	13	9 a.m. (29th).	S.W. by S.	38	—
Alnwick Castle.	Noon (28th).	S.W. by S.	3 p.m. (28th).	S.W.	43	3	8 p.m. (28th).	W.	8	4 p.m. (28th).	W.S.W.	44	42 miles were recorded at Noon on 27th, but at 11 a.m. and 1 p.m. the velocity was below 30 miles per hour. At 9 a.m. 28th, 37 miles were registered.
	9 p.m. (28th).	W.	9 a.m. (29th).	W.S.W.	40	1	9 p.m. (29th).	S.W.	24	11 a.m. (29th).	S.W. by W.	41	
			11 a.m. (29th).	S.W. by W.	40	6				3 p.m. (29th).	S.W.		
	—	—	7 a.m. (30th).	S.W.	41	1	10 a.m. (30th).	W.S.W.	3	7 a.m. (30th).	S.W.	41	Wind rose to 34 miles at 5 a.m. 30th.
	11 a.m. (30th).	W. by S.	—	—	—	—	6 p.m. (30th).	W.S.W.	7	2 p.m. (30th).	W.S.W.	36	—
Seaham	11 a.m. (28th).	S. by W.	—	—	—	—	6 p.m. (28th).	S.W. by W.	7	1 p.m. (28th).	S.W. by S.	38	—
										2 p.m. (28th).	S.S.W.		
Stonyhurst.	9 a.m. (28th).	S. by W.	—	—	—	—	1 p.m. (28th).	S.W. by S.	4	11 a.m. (28th).	S.W. by S.	36	Wind again rose to 32 miles at 2 p.m. 28th.

(*Table continued on next page.*)

No. 17 (*continued*). (CYCLONIC SYSTEM, No. XXV.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity. Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
May 26–30, 1877.													
Holyhead.	1 a.m. (27th).	S. by W.	6 a.m. (27th). 11 p.m. (27th).	S. S.	47 40	16 1	2 a.m. (28th).	S.W. by S.	25	2 p.m. (27th).	S.	56	—
	4 a.m. (28th).	S.S.W.	6 a.m. (28th). 10 a.m. (28th).	S. by W. S.W. by S.	44 42	3 3	3 p.m. (28th).	S.W.	11	7 a.m. (28th).	S. by W.	49	—
	2 a.m. (29th).	S.W. by W.	—	—	—	—	10 a.m. (29th).	S.W.	8	7 and 8 a.m. (29th).	S.W.	34	—
	Noon (29th).	S.W. by S.	—	—	—	—	4 p.m. (29th).	S.W. by S.	4	1 p.m. (29th). 2 p.m. (29th).	S.W. by S. S.S.W.	34	—
Valencia.	1 p.m. (26th).	S. by W.	—	—	—	—	5 p.m. (26th).	S.	4	4 p.m. (26th).	S. by W.	33	—
	7 p.m. (26th).	S.	11 p.m. (26th).	S.	43	13	3 p.m. (27th).	S.W.	20	10 a.m. (27th).	S.	55	—
	5 p.m. (27th).	S.S.W.	Midt. (27th).	S.W. by S.	43	2	4 a.m. (28th).	W. by S.	11	1 a.m. (28th).	S.W.	44	—
	9 a.m. (28th).	W. by N.	—	—	—	—	4 p.m. (28th).	W. by N.	7	10 a.m. (28th). 1 p.m. (28th).	N.W.b.W. W.N.W.	34	—
Falmouth.	11 a.m. (27th).	S. by W.	8 p.m. (27th).	S. by W.	42	1	1 a.m. (28th).	S.W. by W.	14	8 p.m. (27th).	S. by W.	42	—
	5 a.m. (28th).	S.W. by W.	9 a.m. (28th). 11 a.m. (28th).	S.W. S.W. by W.	41 40	1 1	7 p.m. (28th).	W.	14	9 a.m. (28th).	S.W.	41	Wind also exceeded 30 miles per hour at 2 and 3 a.m. on 28th.
Kew	11 a.m. (28th).	S.W.	—	—	—	—	6 p.m. (28th).	S.W.	7	2 p.m. (28th).	S.W.	37	
Yarmouth	2 p.m. (28th).	S.W.	—	—	—	—	5 p.m. (28th).	S.W. by W.	3	3 p.m. (28th).	S.W.	36	—

No. 18. (CYCLONIC SYSTEM, No. XXVII.)

June 4–6, 1877.													
Alnwick Castle.	7 a.m. (5th).	S.S.W.	11 a.m. (5th).	S.W.	45	4	6 p.m. (5th).	W.S.W.	11	1 p.m. (5th).	W.S.W.	49	—
Seaham	—	—	9 a.m. (5th).	S. by W.	45	2	Noon (5th).	S.W.	3	10 a.m. (5th).	S.S.W.	45	—
Stonyhurst.	7 a.m. (5th).	S.	—	—	—	—	9 a.m. (5th).	S.W. by S.	2	7 a.m. (5th).	S.	38	—
Holyhead	11 p.m. (4th).	S. by W.	Midt. (4th). 10 p.m. (5th). 2 a.m. (6th). 5 a.m. (6th). Noon. (6th).	S. S. S. S. S. by E.	52 41 40 40 40	7 2 1 1 3	3 p.m. (6th).	W.N.W.	40	5 a.m. (5th).	S.	61	—
Valencia	9 a.m. (5th).	S.	2 p.m. (5th). 4 p.m. (5th).	S. S. by E.	42 41	1 2	8 p.m. (5th).	S.W. by S.	11	2 p.m. (5th).	S.	42	—
Falmouth	5 p.m. (4th).	S.S.W.	—	—	—	—	5 a.m. (5th).	S.W. by W.	12	10 p.m. (4th).	S. by W.	39	—

TABLE OF ANTICYCLONIC SYSTEMS—APRIL, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. VII. April 14-18.	No. VIII. April 19-28.
Form	Elliptical	Elliptical
Size	Large	Large
Height	Moderate; maximum readings 30·5 inches on 16th.	Moderate; maximum readings 30·6 inches on 20th.
Where first Observed	Over Denmark and southern Scandinavia	Over the northern portion of Scandinavia
Direction of Motion	At first nearly stationary, then moved to the westward.	At first stationary, then travelled westward
Rate of Motion	Very slow	Very slow
Regions passed over	Scandinavia	Scandinavia and the Gulf of Bothnia
Termination	Disappeared over the North Atlantic	Disappeared over the North Atlantic
Accompanying Wind	South-easterly, backing to East and North-east, at times very strong.	At first light and variable, then strong from South-east backing to East and North-east.
,, **Weather**	Fine at the northern stations, but generally dull elsewhere, with heavy rain in the west and south-west on the 15th.	At first heavy rain, especially in the south-west, with hail, snow, and rain, on the 22nd; afterwards generally dry, and in the north fine; very cold in the Baltic during the early part of the time.
REMARKS	Simultaneously with the development of this system a depression appeared on our south-western coasts, causing strong winds to prevail, more especially during the first part of the period. As the depression passed eastward to the Continent the high-pressure area shifted to the westward over the ocean.	This system followed close upon the last, and, as in that case, was accompanied by a belt of low pressure to the southward and westward of the British Isles, through which occasional depressions passed. On the 20th a band of high readings stretched down across the North Sea, southern England, and north-western France, but it continued only for a very short time.

TABLE OF ANTICYCLONIC SYSTEMS—APRIL–JUNE, 1877.

No. IX. **April 29—May 4.**	No. X. **May 18-26.**	No. XI. **June 13-20.**	No. XII. **June 23-30.**
Irregular	Uncertain	Irregular	Elliptical.
Small	Large	Large	Large.
Moderate; maximum readings 30·4 inches on 1st.	Moderate; maximum readings 30·5 inches on 21st.	Small; maximum readings 30·30 inches on 16th and 18th.	Small; maximum readings 30·34 inches on 28th and 29th.
Over northern Scotland	Over the Bay of Biscay	The British Isles	The Bay of Biscay.
Southerly	At first north-westerly, then southerly	At first easterly, then north-westerly	Northerly; then almost stationary.
Very slow	Very slow	Very slow	Very slow.
The British Isles	The British Isles and western France	The British Isles, the North Sea, and Germany.	France and the southern portion of the British Isles.
Dispersed	Dispersed over France	Dispersed over the North Atlantic	Eventually dispersed, but not until July.
North-easterly, backing to North on the eastern coasts, and veering to East and South-east on the southern coasts and in Ireland.	Fresh Westerly winds veering to North and North-east; afterwards backing again to West and falling light.	Light Easterly and variable airs, increasing at times to a fresh Easterly breeze on the south-western coasts.	Generally Westerly over Great Britain, but Northerly and Easterly over south-western France.
Generally dry; cloudy at first, but sky becoming clearer later on.	At first wet, with thunderstorms over the northern and eastern counties; then cloudy and very cold and raw, but becoming finer towards the close of the period.	Generally fine and warm, with one or two thunderstorms in different parts of the kingdom.	Generally fine and warm, but rather unsettled at times, especially in the north and west.
This system formed a ridge of high pressure between two areas of low readings; the one over Scandinavia and the other over the Peninsula. After the 4th it very gradually extended eastward, and although the barometer had then fallen very considerably, it continued to exist as an area of relatively high pressure for several days.	This system first showed itself over the Bay of Biscay whence it moved northward to the mouth of the Channel; but with the passage down the North Sea of depression No. XXIV. its course became more westerly, and passing outside our western coasts it again developed itself, in the rear of the disturbance, over northern Scotland. Apparently only a portion of the system came within our area.	During the whole of this period pressure was tolerably uniform over the greater part of western Europe.	This system did not break up until some days later on in July, when having extended itself eastward over Germany, it became gradually smaller, and at last dispersed over southern Europe. During the whole of the period here dealt with an area of low pressure existed to the northward of Great Britain.

NOTES to accompany the ANTICYCLONIC TABLES.

April 1st–13th.—During the first two days of the month the barometer was highest over the Bay of Biscay and France, but at the close of the 3rd the highest readings were found in the neighbourhood of the Baltic, from whence, after continuing there for some days, they gradually spread over central and southern Europe. On the 9th another area of high pressure became developed over northern Europe, and remained there till the close of the 11th, when it gave way, and a band of uniform and relatively high readings spread over the British Isles and the North Sea.

May 5th–17th.—On the 5th the barometer, although nowhere very high, was highest over Great Britain, where there still existed, after the anticyclone had become dispersed, an area of relatively high readings. During the next four or five days this moved eastwards to the Baltic and then northward to Lapland, passing out of our area on the 11th. For a few days after this the barometer was higher, both to the north and south of Great Britain, than over it, but on the 16th the southern area moved northward, and uniting with that which lay over Scandinavia, formed a band of high pressure over the central and western portions of the Continent, which continued till the development of the anticyclone over the Bay of Biscay on the 18th.

May 27th–June 12th.—The highest pressures lay over south-eastern Europe during the first few days of this interval, after which they spread to the central and western portions of the Continent. On the 6th readings increased somewhat over the Peninsula and France, and formed a ridge of high pressure which extended itself northwards, and from the 8th to the 12th the barometer was high and fairly uniform over the whole of southern and central Europe. On the latter day an arm of high pressure was thrown out over Great Britain, which resulted, as it became further developed, in the formation of the anticyclone No. XI.

June 21st–22nd.—During these two days the barometer was very uniform over the whole of Europe; on the 22nd, however, a shallow depression reached Great Britain, and consequently readings were lower there than elsewhere.

SECTION III.

REMARKS FOR APRIL 1877.

(*Tables A. to C.* APRIL, *with Monthly Wind and Weather Charts.*)

Wind.—The month opened with moderate to fresh Northerly winds, which, however, only lasted for a short time, and gave way, on the 2nd, to a Southerly current, which continued to blow for some days. On the 8th a further retrograde movement began, and resulted in the establishment of an Easterly wind, which, on the 9th, blew very strongly in some parts of the country. The direction then became somewhat variable for a few days, backing to North and veering again to South-east, but generally blowing from between those points. On the 15th strong Southerly and South-easterly winds had again become general, but by the 17th they had backed once more to East, and by the 19th to North-east. The wind then veered again, and on the 21st blew strongly from South-east on the eastern coasts, while Westerly winds were experienced at the south-western stations, and these conditions continued till the 23rd. The direction then became more Easterly in the north, and over the kingdom generally the wind circulated around a depression whose centre lay over St. George's Channel; but that passing away, South-east and East again became the general direction, and continued to be so until the 29th; a further backing to North-east then took place, and next day it shifted still further to North, which was the prevailing direction at the close of the month.

Regarding the wind for the whole month, as shown by the chart, the Easterly current—North-east to South-east—largely predominated, while the Westerly current was but little felt; the percentages of the latter direction were therefore very low, and indeed in some places were almost *nil.*

Pressure.—The highest average values for the month were found in the extreme north of the kingdom, and the lowest in the south-west, the difference of a quarter of an inch between the means at Valencia and Sumburgh Head indicating gradients for South-easterly winds. The highest readings occurred in all parts of the country on the 30th, when an area of high pressure was becoming developed on our northern coasts, and the barometer was still rising. The lowest readings were recorded on the 4th in connection with depression No. XIX., the centre of which passed over our western coasts. The range of pressure was not large, amounting to 1·6 inches at Glasgow, and to less at the other stations.

Movements of the Depressions.—Although the depressions were rather numerous, they were in no case exceptionally severe, and in most instances they pursued a northerly or north-easterly course along our western coasts. On one occasion, however, the centre moved south-eastward, past our south-western coasts, to France, and then eastward across that country to southern Europe, and on another it travelled over central England to the Continent. One case occurred in which the system remained for some time over our Islands, and gradually became filled up there. During the first half of the month bands of high pressure existed for brief periods over portions of central and north-western Europe, but on the 14th a well-defined anticyclone became established over Scandinavia, and remained there till near the end of the month, when it moved westwards towards the northern portion of the British Isles.

Temperature.—The mean temperature, which was everywhere low for April, decreased pretty regularly from 49° in the west of Cornwall to 41° over north Scotland. Both the highest and the lowest readings—but especially the former—were recorded at irregular dates; in the midland counties the maxima were most generally observed on the 22nd, but elsewhere they were, as a rule, recorded much earlier in the month; while in nearly all parts of the country the minima were registered between the 18th and 25th, during nearly the whole of which period Easterly winds, governed by the anticyclone over Scandinavia, prevailed over the country. In most places the range of temperature was not great; at Glenalmond it amounted to 36°, and at some of the south-eastern inland stations to 33°, but generally speaking, it was considerably less than this, and at some places on the east coast of England amounted to but 17°.

Vapour Tension.—The distribution of vapour tension was to some extent similar to that of temperature, the highest values being found over Cornwall, and the lowest over northern Scotland, there being, however, in addition a patch of low values over north-western England. *Relative Humidity* was also greatest in the south-west of England, and on the coast of Wales, and least over Scotland, but its distribution was much less regular than that of Vapour Tension.

Rainfall.—The month was decidedly a wet one, the fall of rain being in excess of the average everywhere except in the north and north-east of Scotland, while in some places—as at Roche's Point and Durham—the excess was very marked. At the former of these two stations 10·22 inches fell in the month, and at the latter upwards of 6 inches. The largest daily fall was recorded at Dartmoor, and amounted to nearly 3 inches, but at both Babbacombe and Roche's Point falls of nearly 2 inches in 24 hours were recorded, and upwards of an inch at a few other stations. As a rule, however, the daily amounts were considerably below an inch, and in very many cases they were by no means large.

TABLE A., APRIL.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of APRIL 1877; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).						TEMPERATURE In the Shade (In Degrees Fahrenheit).						HYGRO-METRIC VALUES.		RAIN-FALL (In English Inches).
	Mean for the Month.	Extremes.				Range.	Mean for the Month.	Extremes.				Range.	Tension of Vapour (In English Inches).	Relative Humidity (Saturation=100).	
		Minimum.		Maximum.				Minimum.		Maximum.					
		Reading.	Date.	Reading.	Date.			Reading.	Date.	Reading.	Date.				
	ins.	ins.	D. H.	ins.	D. H.	ins.	°	°	D. H.	°	D. H.	°	in	%	ins.
Valencia - -	29·634	28·870	5th, 4 a.m.	30·308	30th, Midt.	1·438	48·5	37·6	19th, 4 a.m.	59·7	15th, 2 p.m.	22·1	·285	84	5·775
Armagh - -	·746	·953	4th, 9 p.m.	·382	30th, Midt.	1·429	43·8	33·3	19th, 5 a.m.	52·9	14th, 4 p.m.	19·6	·236	82	3·200
Glasgow - -	·796	·807	4th, 10 p.m.	·397	30th, Midt.	1·590	41·5	29·9	12th, 6 a.m.	54·4	20th, 12 p.m.	24·5	·199	77	3·142
Aberdeen - -	·873	28·953	4th, 5 a.m.	·386	30th, Midt.	1·433	40·2	30·1	12th, 5 a.m.	50·3	4th, 3 p.m.	20·2	·198	80	3·245
Falmouth - -	·715	29·021	4th, 11 a.m.	·277	30th, Midt.	1·256	48·2	36·9	17th, Midt.	57·7	21st, 1 p.m.	20·8	·283	85	4·550
Stonyhurst - -	·778	28·879	4th, 5 p.m.	·377	30th, Midt.	1·498	43·1	32·8	12th, 6 a.m.	54·0	22nd, 2 p.m. } 3 p.m. }	21·2	·220	79	2·861
Kew - -	29·767	28·982	4th, 4 p.m.	30·295	30th, Midt.	1·313	46·4	33·2	20th, 5 a.m.	63·3	4th, 2 p.m.	30·1	·246	79	2·700

TABLE B., APRIL.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not

(The Stations are grouped in Districts, and then arranged in order of

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	AIR TEMPERATURE.									
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Means of			Absolute Extremes.			
						Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°	°	°		°	
0. SCOTLAND, N. -	Sandwick Manse (Orkneys)	29·867	41·1	38·3	39·7	35·9	44·5	40·2	28·3	14th	51·5	4th
1. SCOTLAND, E. -	Glenalmond - - -	29·849	39·9	37·3	38·6	33·6	46·0	39·8	26·5	20th	56·0	20th
2. ENGLAND, N.E. -	Seaham - - -	29·812	43·5	41·7	42·6	38·3	47·2	42·8	30·8	20th	58·2	2nd
	†Durham - - -	29·809	42·8	39·7	41·3	36·1	47·6	41·9	28·3	20th	59·3	4th
	Hull - - - -	29·811	44·8	42·6	43·7	39·2	48·9	44·1	32·5	25th	58·5	4th
	Kelstern - - -	29·808	43·2	40·8	42·0	37·9	48·2	43·1	31·3	25th	59·2	4th
3. ENGLAND, E. -	*Hillington - - -	‡—	46·1	42·4	44·3	38·2	51·7	45·0	27·2	25th	60·9	20th
	*Audley End - - -	29·792	46·4	43·8	45·1	38·8	51·6	45·2	30·0	20th	62·4	4th
	Chigwell Row - -	29·805	46·6	44·5	45·6	39·6	51·3	45·5	32·0	20th	58·0	22nd
4. MIDLAND COUNTIES.	*Wakefield - - -	29·804	43·9	43·3	43·6	37·7	49·2	43·5	28·4	25th	57·2	4th
	*Buxton - - -	29·793	41·6	40·2	40·9	35·7	47·2	41·5	30·1	21st	53·1	22nd
	*Cheadle - - -	29·782	42·3	41·1	41·7	37·1	48·5	42·8	31·1	20th	55·1	22nd
	Leicester - - -	29·780	45·2	44·3	44·8	39·2	50·9	45·1	32·1	24th	58·8	22nd
	Uppingham - - -	29·783	44·3	41·8	43·1	37·3	50·4	43·9	32·0	25th	60·5	22nd
	Oscott - - - -	29·771	43·5	42·7	43·1	38·0	50·7	44·4	31·8	26th	60·8	22nd
	*Churchstoke - - -	29·769	42·6	42·8	42·7	37·2	49·5	43·4	27·0	20th	56·9	22nd
	*Hereford - - -	29·756	44·8	43·8	44·3	38·8	51·7	45·3	28·2	20th	59·1	22nd
5. ENGLAND, S. -	*Marlborough - - -	29·771	45·1	43·6	44·4	38·7	52·2	45·5	30·2	17th	59·5	22nd
	*Strathfield Turgiss - -	29·773	47·5	44·4	46·0	39·1	54·1	46·6	28·9	20th	60·2	10th, 22nd
	*Ramsgate - - -	29·762	47·4	45·3	46·4	42·4	51·8	47·1	38·1	19th	61·4	9th
	Folkestone - - -	29·774	46·9	44·9	45·9	41·7	51·3	46·5	35·9	25th	59·6	4th
	Hastings - - -	29·774	47·4	45·1	46·3	41·3	51·6	46·5	35·1	20th	58·5	9th
6. SCOTLAND, W. -	——	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND, N.W. -	*Hawes - - -	29·816	41·6	39·0	40·3	34·4	46·6	40·5	23·0	2nd	55·1	20th
	Prestwich - - -	29·778	43·2	42·3	42·8	38·2	49·5	43·9	31·4	20th	55·7	8th
	*Llandudno - - -	29·747	46·7	44·3	45·5	40·5	51·8	46·2	34·5	20th	59·8	22nd
8. ENGLAND, S.W. -	*Caermarthen - - -	29·717	47·8	44·3	46·1	40·5	54·1	47·3	31·7	20th	61·4	10th, 14th
	*Dartmoor - - -	29·737	42·6	40·0	41·3	36·4	46·9	41·7	28·5	17th	53·6	14th
	*Babbacombe - - -	29·731	47·3	45·3	46·3	41·9	52·2	47·1	35·0	20th	64·1	21st
9. IRELAND, N. -	Markree Castle - -	29·704	45·6	43·7	44·7	38·6	51·4	45·0	29·8	6th	57·0	14th
10. IRELAND, S. -	Dublin - - -	29·735	46·7	45·1	45·9	41·8	50·4	46·1	36·0	24th	57·6	2nd
	Parsonstown - - -	29·698	46·6	44·1	45·4	40·0	53·2	46·6	32·0	6th	61·2	14th
CHANNEL - -	Jersey (St. Aubin's) -	29·768	48·7	47·0	47·9	43·8	53·3	48·6	35·3	17th	58·8	14th

NOTE: The Stations marked thus * are in connection with the Royal Meteorological Society.
‡ At Hillington the barometer was out

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of APRIL 1877.
corrected for Diurnal Range.

Latitude, beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10.)			RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	%	%	%				ins.	in.																	
·207	·200	·204	80	87	84	6·0	6·3	6·2	1·440	·310	3rd	11	8	0	0	5	10	8	6	5	16	18	3	1	0	5	6
·202	·204	·203	82	90	86	7·8	6·6	7·2	3·950	·890	4th	15	3	1	0	1	14	0	2	8	25	14	1	5	2	2	1
·242	·239	·241	85	91	88	7·6	7·6	7·6	4·462	1·010	9th	19	2	0	2	1	15	1	3	9	16	14	3	2	0	4	9
·228	·225	·227	83	91	87	8·7	7·7	8·2	6·063	1·267	9th	20	4	0	1	1	19	0	3	14	18	7	9	1	1	7	0
·250	·238	·244	85	87	86	7·9	6·9	7·4	3·650	·970	22nd	16	0	0	1	0	14	1	1	13	9	11	5	8	1	6	6
·249	·244	·247	89	95	92	8·2	8·2	8·2	3·015	·535	9th	22	0	0	2	1	21	0	4	8	15	12	8	6	0	5	2
·266	·255	·261	85	93	89	8·3	7·7	8·0	2·293	·548	21st	16	0	1	2	0	18	2	0	16	7	16	7	6	2	6	0
·249	·251	·250	79	87	83	8·0	7·1	7·6	2·200	·410	9th	14	0	3	6	0	16	0	3	20	0	11	7	8	2	6	3
·258	·257	·258	81	87	84	8·1	6·5	7·3	2·500	·740	8th	10	0	2	4	1	12	0	2	8	17	7	7	8	4	2	5
·243	·251	·247	85	89	87	8·5	7·0	7·8	3·230	·800	22nd	17	0	1	2	1	15	1	3	9	13	8	2	2	1	1	21
·233	·224	·229	88	89	88	8·8	9·0	8·9	2·385	·480	22nd	16	2	2	2	0	22	3	0	4	14	17	5	8	4	5	3
·222	·224	·223	82	87	84	8·6	7·7	8·2	2·230	·440	3rd	16	0	0	3	0	19	1	3	12	8	14	8	3	2	3	7
·237	·241	·239	79	82	81	9·0	8·1	8·6	3·150	·870	9th	16	1	0	0	0	20	3	4	24	3	9	7	10	3	0	0
·243	·240	·242	83	88	86	8·9	7·7	8·3	2·920	·827	9th	16	1	1	2	0	18	0	1	15	7	4	9	6	3	5	10
·244	·246	·245	86	89	87	9·6	8·2	8·9	2·540	·450	4th	17	2	2	3	0	25	1	3	17	12	7	9	4	4	3	1
·238	·239	·239	87	86	86	8·7	7·6	8·2	2·343	·891	20th	14	1	1	0	0	19	0	1	7	15	14	4	4	2	3	10
·246	·244	·245	83	84	84	8·9	6·9	7·9	2·627	·540	20th	19	2	0	1	1	18	0	0	3	17	8	6	1	4	1	20
·252	·252	·252	83	88	86	9·0	6·8	7·9	3·670	·547	3rd	19	0	2	0	0	18	0	9	4	16	4	8	1	6	0	12
·258	·247	·253	78	84	81	8·6	6·9	7·8	2·479	·528	27th	17	2	0	2	0	17	0	3	20	3	8	7	8	4	5	2
·273	·270	·272	84	89	86	7·3	7·0	7·2	2·290	·530	4th	17	1	2	2	0	10	7	4	22	8	3	2	15	1	4	1
·270	·262	·266	84	88	86	7·1	7·0	7·1	2·760	·490	4th	17	1	5	4	0	11	4	5	11	17	2	12	6	5	2	0
·263	·261	·262	80	86	83	8·2	7·0	7·6	2·685	·440	23rd	19	0	3	5	0	15	2	2	19	13	5	2	11	4	3	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·211	·213	·212	80	88	84	8·5	8·4	8·5	3·430	·510	4th	18	6	2	4	1	19	0	1	6	26	7	3	4	4	0	9
·217	·222	·220	78	83	81	8·4	7·3	7·9	1·794	·350	4th	16	0	0	2	1	17	0	1	9	18	9	10	2	2	2	7
·246	·244	·245	77	84	80	7·7	6·8	7·2	2·600	·475	8th	15	0	2	0	1	14	0	3	2	26	9	7	4	7	2	0
·278	·263	·271	83	90	87	7·8	5·9	6·9	3·510	·680	15th	17	0	2	0	2	15	1	4	3	17	11	4	3	8	0	10
·250	·238	·244	91	96	93	9·1	6·7	7·9	9·370	2·970	15th	18	3	3	1	0	15	4	0	6	13	11	7	5	6	5	7
·281	·266	·274	86	87	87	9·0	6·4	7·7	5·800	1·940	15th	19	2	4	1	0	14	7	3	12	12	7	7	10	3	5	1
·253	·244	·249	83	85	84	8·3	8·2	8·3	1·185	·177	5th	19	0	0	0	0	17	0	1	8	11	23	4	6	1	4	2
·267	·252	·260	84	83	83	8·4	6·6	7·5	4·707	1·095	15th	21	1	4	0	0	15	2	3	7	18	14	6	0	8	1	3
·267	·254	·261	83	88	86	8·6	8·2	8·4	3·006	·474	8th	23	0	1	0	0	21	0	0	4	15	22	2	4	5	3	5
·289	·281	·285	84	87	86	8·6	4·5	6·6	3·845	·828	15th	20	0	4	0	0	12	2	0	13	10	7	6	8	10	1	5

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† At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

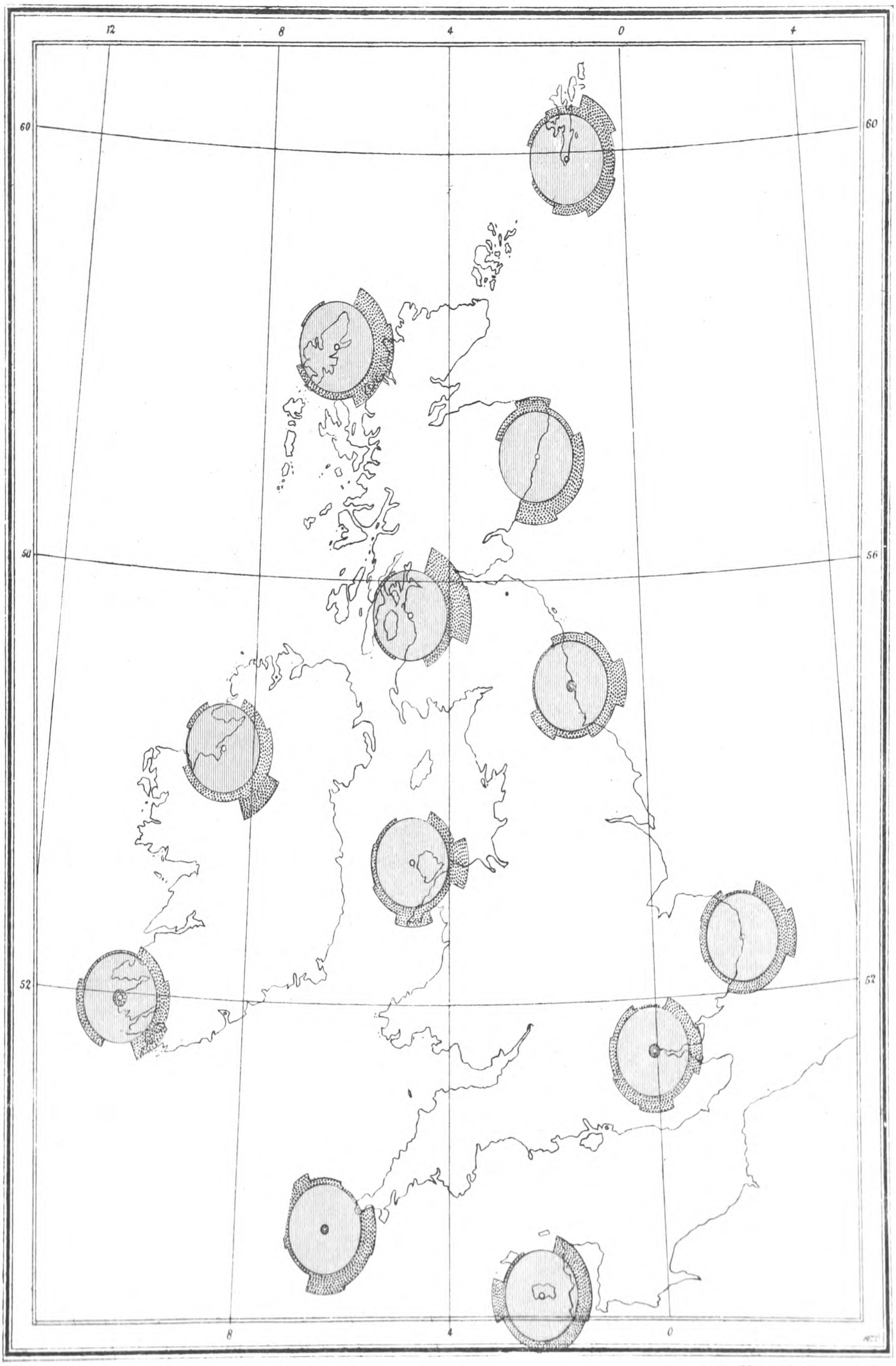
of order during part of this month.

TABLE C., APRIL.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS during the month of APRIL 1877. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.								TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
				Means of			Absolute Extremes.																									
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
		ins.	°	°	°	°	°		°		in.	%		ins.	in.																	
0. SCOTLAND, N.	Sumburgh Head	29·884	39·9	34·7	43·8	39·3	27	13th	49	25th	0·188	76	7·1	1·09	0·48	3rd	15	5	1	0	4	13	6	3	9	5	7	3	1	0	2	0
	Thurso	29·836	41·0	36·1	47·7	41·9	26	19th	56	20th	·221	86	7·2	1·92	0·67	10th	17	7	0	0	3	14	5	2	3	7	8	5	1	0	2	2
	Wick	29·851	40·4	35·3	46·7	41·0	26	19th	55	4th	·213	85	7·7	1·79	0·60	10th	13	4	0	0	4	20	4	1	3	8	6	5	0	1	3	3
	Stornoway	29·791	42·3	35·2	47·2	41·2	25	13th	53	20th, 25th	·216	80	4·9	1·77	0·37	21st	14	2	1	0	12	10	2	0	8	9	6	3	3	0	1	0
1. SCOTLAND, E.	Nairn	29·826	39·7	34·2	48·1	41·2	27	13th, 18th, 19th.	57	17th	·194	79	5·1	1·40	0·79	10th	13	0	0	0	13	12	1	0	2	6	4	0	1	0	2	15
	Aberdeen	29·831	40·9	37·2	45·7	41·5	30	12th, 13th, 20th.	51	4th	·200	79	5·1	3·29	0·96	10th	12	1	0	1	13	12	2	5	2	5	6	9	0	0	3	0
	Leith	29·804	41·9	36·6	48·9	42·8	29	20th	60	20th	·224	85	6·7	2·46	0·78	9th	15	0	0	1	4	11	0	0	3	9	8	3	2	3	2	0
2. ENGLAND, N.E.	Shields	29·814	41·6	38·1	45·5	41·8	31	20th	53	4th	·225	86	7·3	3·89	1·31	9th	16	1	0	1	4	18	5	3	4	9	5	2	4	1	1	1
	Scarborough	29·812	42·7	39·6	45·8	42·7	?35	13th	52	4th	·237	86	7·6	3·28	0·58	21st	15	1	2	2	4	16	4	3	3	9	4	4	3	1	2	1
	York	29·807	42·5	37·5	50·1	43·8	30	20th	58	4th	·226	84	7·6	3·38	0·70	22nd	18	1	2	4	6	19	1	5	6	7	2	6	0	2	2	0
3. ENGLAND, E.	Yarmouth	29·794	43·5	40·0	47·2	43·6	36	2nd	53	7th, 10th	·243	86	5·0	2·32	0·66	8th	18	1	1	0	11	6	2	1	6	9	4	4	1	2	3	0
	Cambridge	29·788	44·8	38·2	53·5	45·9	31	20th, 25th, 26th.	64	4th	·251	85	7·9	2·59	0·37	4th	18	0	2	4	5	19	0	1	8	4	4	5	3	2	3	0
4. MIDLAND COUNTIES.	Nottingham	29·798	43·7	38·6	52·9	45·8	32	24th, 25th	64	22nd	·243	85	8·9	3·51	0·63	22nd	17	0	3	3	0	22	3	4	5	3	5	7	3	1	2	0
	Oxford	29·768	44·8	40·2	53·6	46·9	34	20th, 24th, 25th, 26th.	61	22nd	·251	85	8·9	2·17	0·35	6th	16	0	4	3	2	23	0	2	6	6	3	2	5	1	1	4
5. ENGLAND, S.	London	29·773	46·5	40·9	54·0	47·5	34	24th	67	4th	·251	80	8·1	3·22	0·90	9th	18	0	1	3	1	18	1	1	5	6	3	5	4	3	2	1
	Dover	29·775	47·2	43·9	50·6	47·3	40	12th, 25th	57	4th	·258	80	4·7	2·28	0·57	22nd	14	0	0	1	8	2	1	2	5	6	3	3	6	3	2	0
	Hurst Castle	29·742	47·1	42·1	51·2	46·7	33	20th	58	2nd	·320	98	8·7	2·57	0·52	15th	18	0	0	0	2	22	1	1	7	6	2	5	3	1	1	4
6. SCOTLAND, W.	Ardrossan	29·784	42·1	38·1	50·4	44·3	32	12th	58	19th	·208	78	6·8	3·66	0·76	3rd	13	0	0	1	6	13	1	0	11	13	4	0	1	0	1	0
7. ENGLAND, N.W.	Liverpool	29·760	43·4	39·9	50·0	45·0	34	18th	55	8th	·224	79	7·8	2·38	0·75	4th	14	0	0	0	4	20	1	0	4	9	7	2	2	2	2	2
	Holyhead	29·722	45·6	42·3	50·7	46·5	38	17th, 18th, 20th.	55	8th, 25th	·292	96	7·7	3·28	0·53	3rd	17	0	0	0	3	15	2	0	4	10	2	7	4	2	1	0
8. ENGLAND, S.W.	Pembroke	29·689	45·9	42·2	50·5	46·4	31	5th	55	10th, 30th	·266	87	6·8	4·97	1·19	15th	17	0	0	0	5	13	3	2	4	4	13	2	0	3	2	0
	Portishead	29·735	44·5	39·3	52·9	46·1	31	20th	61	10th	·261	90	7·9	2·67	0·38	27th	20	0	1	2	1	14	4	5	6	7	3	2	3	3	0	1
	Plymouth	29·707	47·6	42·7	54·1	48·4	35	20th	61	11th	·293	90	8·5	4·48	1·45	15th	16	0	1	0	3	21	3	1	4	10	5	2	2	2	3	1
9. IRELAND, N.	Greencastle	29·716	43·4	38·5	49·6	44·1	33	19th	55	7th, 25th	·238	84	7·4	1·47	0·28	9th	14	0	0	0	8	22	0	0	1	12	8	4	2	2	1	0
	Donaghadee	29·753	42·9	39·5	47·8	43·7	33	21st	53	2nd, 8th	·248	90	7·1	3·38	0·75	4th	15	0	0	0	2	13	6	0	4	9	10	3	1	0	3	0
10. IRELAND, S.	Kingstown	29·714	45·7	42·7	49·0	45·9	38	18th	56	21st	·262	86	8·3	5·02	0·97	12th	18	0	1	0	1	16	3	1	2	5	8	9	0	1	2	2
	Valencia	29·634	48·2	43·2	52·9	48·1	36	18th	57	10th, 16th, 28th.	·272	82	7·2	5·40	0·76	24th	24	0	1	0	2	14	6	1	5	7	8	0	3	3	1	2
	Roche's Point	29·663	47·6	44·1	53·3	48·7	35	18th	58	1st, 2nd, 8th, 21st.	·286	88	6·5	10·22	1·98	27th	25	0	0	0	2	10	4	0	5	4	6	5	4	3	3	0
CHANNEL	Scilly	29·685	49·3	45·7	52·8	49·3	38	18th	57	10th	·306	88	9·2	4·14	0·93	15th	22	0	2	0	0	22	6	2	1	6	5	7	1	2	5	1

MONTHLY WIND CHART FOR APRIL 1877.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4
60
60
56
56
52
52
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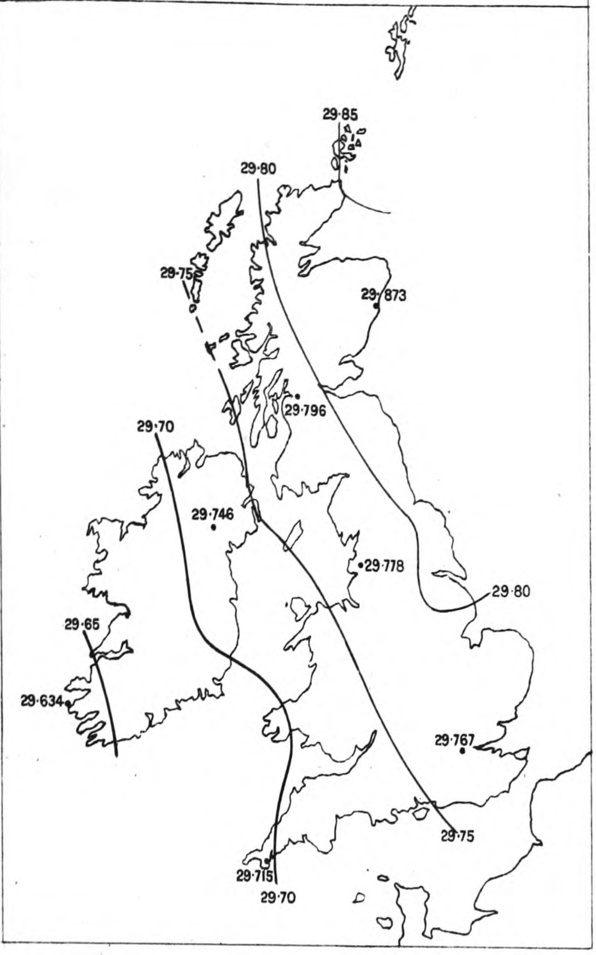
4
0

To face p. 68.

Dangerfield Lith. 22 Bedford St. Covent Garden.

MONTHLY WEATHER CHART APRIL 1877.

1. DISTRIBUTION OF MEAN PRESSURE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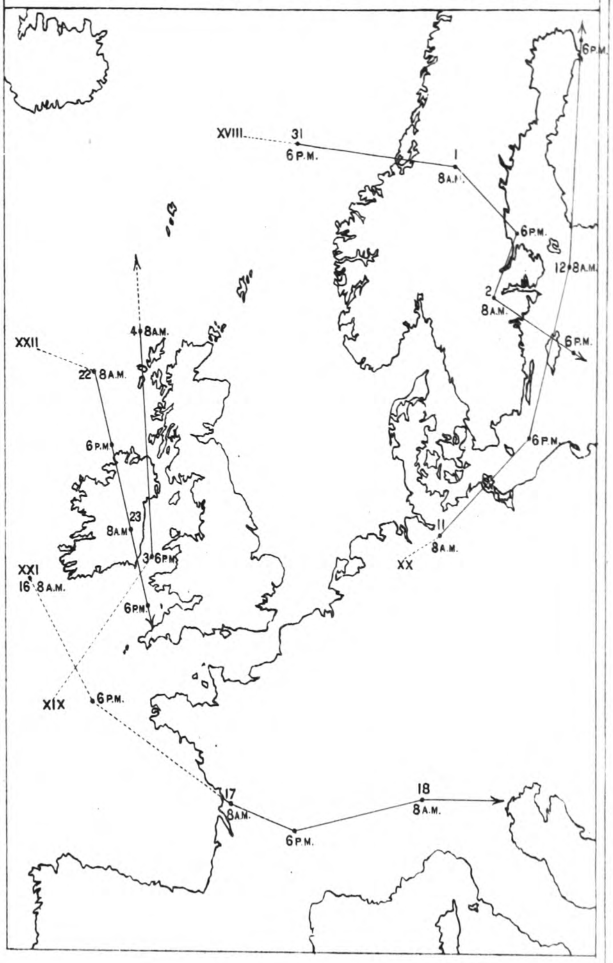
29·715
29·70

2. MOVEMENTS OF DEPRESSIONS.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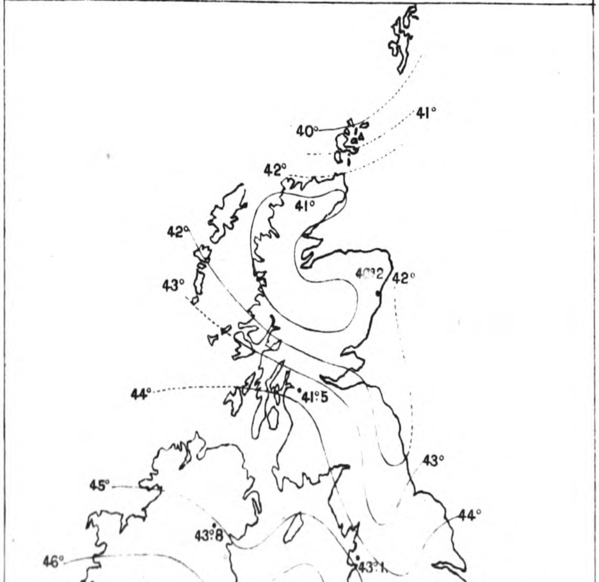
1
8 A.M.
6 P.M.
6 P.M.
12 8 A.M.
2
8 A.M.
6 P.M.
XXII
22 8 A.M.
4 8 A.M.
6 P.M.
23
8 A.M.
3 6 P.M.
6 P.M.
XXI
16 8 A.M.
XIX
6 P.M.
6 P.M.
20
11
8 A.M.
XX
17
8 A.M.
6 P.M.
18
8 A.M.

3. DISTRIBUTION OF MEAN TEMPERATURE.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46°
43°1
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46°4
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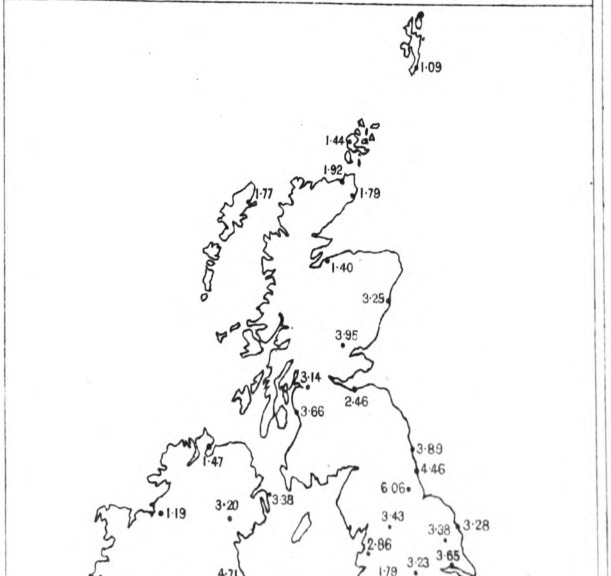
4. RAINFALL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3·89
4·46
6·06
1·19
3·20
3·38
3·43
3·38
3·28
2·86
3·65
1·78
3·23
4·71
3·28
2·38
3·02
3·01
5·02
2·60
2·39
3·51
2·23
2·25
2·34
2·54
3·15
2·32
5·78
2·63
2·59
2·92
2·20
3·51
2·17
10·22
2·50
4·97
3·67
3·22
2·70
2·29
2·67
2·48
2·28
2·57
2·69
2·76
9·37
5·80
4·48
4·55
4·14
3·85

To follow Wind Chart for April.

8829

DANGERFIELD LITH 22 BEDFORD ST COVENT GARDEN

REMARKS FOR MAY 1877.

(*Tables A. to C.*, MAY, *with Monthly Wind and Weather Charts.*)

Wind.—At the beginning of the month the wind circulated around an anticyclone which lay over Great Britain, and, consequently, while it was Northerly on the north and east coasts, it was Easterly over the south of England, and South-easterly on the south-western coasts and in Ireland. On the 6th a South-westerly current appeared on the north-western coasts, and for a short time the wind became rather variable, but by the morning of the 8th the general direction had again become Easterly. The wind then veered over the southern and western portions of the country and blew from South-east and South, in places rather strongly; but it soon backed again, and on the 11th became generally North-easterly. This was followed by another and gradual shift to the southward, and on the 16th moderate to strong South-westerly winds blew on all our coasts; these were caused by the approach of a depression from the westward, and as it soon passed away, the wind veered still more, and for some days fresh Northerly—North-west, North-east—winds prevailed. On the 25th they fell light and backed again to West, and on the 27th to South-west, and increased considerably in force. From the 28th till the close of the 30th strong Westerly winds blew very generally, but the direction then backed once more with the approach of a new depression, and on the 31st South-easterly winds were again blowing on all coasts, and with the force of a gale in the south-west. A reference to the Monthly Wind Chart will show that while Northerly and North-easterly winds were again very prevalent, particularly at the northern and eastern stations, their predominance was not in such marked contrast as had been the case in the preceding month.

Pressure.—The distribution of mean pressure was remarkably uniform, the greatest difference between any two stations being but 0·07 inch; the lowest mean values were in the west of Ireland, and the highest in the east and south of England. The maximum readings occurred at Armagh and the English stations on the 1st, and at Valencia and in Scotland on the 21st. On the former occasion the centre of an anticyclone was located over our Islands, and on the latter an area of high pressure lay to the northward of Scotland. The lowest readings were everywhere registered on the 28th, with the moderately deep depression No. XXV., whose centre passed across Scotland on that day. The range of pressure was greatest over Scotland, where both the highest and lowest readings were recorded; at Aberdeen it amounted to 1·78 inches, but to only 1·11 inches at Falmouth.

Movements of the Depressions.—The depressions observed were but few, and most of them arrived towards the close of the month. One reached our south-west coasts on the 9th and moved very slowly along the Channel to the eastward; it was followed shortly afterwards by another (No. XXIV.), which first travelled northwards from St. George's Channel to north Scotland and then returned south-eastwards down our eastern coasts and the North Sea to Belgium. Those which reached us during the last few days of the month travelled in a north-easterly direction across the northern portions of the kingdom. An anticyclone lay over the British Isles during the first few days of the month, and again during the latter half of the month an area of high pressure, which existed to the northward of Scotland, extended itself southwards over the kingdom.

Temperature.—May, like April, was a remarkably cold month, the mean being everywhere below the average. The highest mean values were in the south-west, the isotherm of 51° passing over Cornwall and the south of Ireland, from whence it decreased to 46° over the north of Scotland and 43° at the Shetlands. The minima were very low for the time of year, and 21°·5 were recorded at Hawes, and 22° at both Audley End and Buxton, while at all the inland and at some of the coast stations readings considerably below 30° were registered; in nearly every case the minima were recorded between the 3rd and 6th while light anticyclonic winds prevailed. The maxima were not high, and occurred generally towards the close of the month, at many stations on the 31st, but the dates were less uniform than in the case of the minima. In many instances the range of temperature was large, and at Hillington and Audley End it amounted to 45°; this was, however, due to the exceptionally low minima, and at most of the coast stations the range was moderate.

Vapour Tension.—This was greatest at the Channel stations and in the south of Ireland, and least in the north-east of Scotland, low values being, however, recorded all over the centre of England. *Relative Humidity* was less regular in its distribution, but was highest in the Channel and at some of the east coast stations, and lowest at some of the midland stations and in the north-east of Scotland.

Rainfall.—In the south-east of England the fall of rain was not in excess of the usual amount, but in nearly every other part of the kingdom the average was exceeded. Falls amounting to an inch in 24 hours were not frequent, and were only recorded at four stations: Nairn, Holyhead, Caermarthen, and Dartmoor, the two latter having also the largest total falls for the month.

TABLE A., MAY.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of MAY 1877; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).						TEMPERATURE in the Shade (In Degrees Fahrenheit).						HYGROMETRIC VALUES.		RAINFALL (In English Inches).
	Mean for the Month.	Extremes.				Range.	Mean for the Month.	Extremes.				Range.	Tension of Vapour (In English Inches).	Relative Humidity (Saturation = 100).	
		Minimum.		Maximum.				Minimum.		Maximum.					
		Reading.	Date.	Reading.	Date.			Reading.	Date.	Reading.	Date.				
	ins.	ins.	D. H.	ins.	D. H.	ins.	°	°	D. H.	°	D. H.	°	in.	%	in.
Valencia - -	29·835	28·949	28th, 2 a.m.	30·352	21st, 11 p.m.	1·403	51·1	37·0	7th, 5 a.m.	62·0	20th, 6 p.m.	25·0	·296	79	3·464
Armagh - -	·866	·718	28th, 8 a.m.	·446	1st, 8 a.m.	1·728	47·8	31·1	4th, 5 a.m.	62·3	16th, 2 p.m.	31·2	·257	78	2·805
Glasgow - -	·848	·686	28th, 1 p.m.	·446	21st, 10 p.m.	1·760	46·4	30·4	8th, 5 a.m.	59·0	25th, 3 p.m. 31st, 5 p.m.	28·6	·225	72	0·938*
Aberdeen - -	·876	28·701	28th, 4 p.m.	·480	21st, 11 p.m.	1·779	44·5	29·5	3rd, 2 a.m.	58·6	30th, Noon	29·1	·233	79	3·055
Falmouth - -	·885	29·278	28th, 2 a.m. 9 a.m.	·391	1st, 5 p.m. 9 p.m.	1·113	50·2	37·2	5th, 5 a.m.	60·3	14th, 4 p.m. 26th, 1 p.m.	23·1	·284	79	4·445
Stonyhurst - -	·871	28·940	28th, 11 a.m.	·437	1st, 8 a.m.	1·497	46·7	27·2	4th, 5 a.m.	63·1	31st, 1 p.m.	35·9	·240	76	3·308
Kew - -	29·882	29·256	28th, 6 a.m.	30·423	1st, 10 p.m.	1·167	49·4	30·0	5th, 4 a.m.	64·4	8th, 3 p.m.	34·4	·257	73	1·895

* The sums for four days are doubtful.

TABLE B., MAY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not

(The Stations are grouped in Districts, and then arranged in order of

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	AIR TEMPERATURE.									
						Means of			Absolute Extremes.			
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°	°	°		°	
0. SCOTLAND, N.	Sandwick Manse (Orkneys)	29·854	45·0	42·7	43·9	39·9	48·7	44·3	29·4	3rd	59·0	27th
1. SCOTLAND, E.	Glanalmond	29·874	46·0	42·6	44·3	37·3	53·6	45·5	27·5	4th, 5th	62·5	16th
2. ENGLAND, N.E.	Seaham	29·867	47·5	44·8	46·2	39·9	51·6	45·8	29·8	4th	61·9	30th
	†Durham	29·857	48·0	42·6	45·3	38·5	52·7	45·6	26·8	4th	63·0	16th
	Hull	29·887	49·5	46·2	47·9	41·4	54·8	48·1	29·0	4th, 6th	66·5	31st
	*Kelstern	29·886	47·3	43·4	45·4	39·2	52·4	45·8	28·0	4th	63·5	31st
3. ENGLAND, E.	*Hillington	29·894	50·3	44·4	47·4	39·0	56·9	48·0	24·4	6th	69·3	31st
	*Audley End	29·893	50·3	45·9	48·1	39·9	56·4	48·2	22·0	5th	67·0	31st
	Chigwell Row	29·910	50·3	47·4	48·9	41·2	55·6	48·4	28·8	4th	63·0	8th, 26th, 27th
4. MIDLAND COUNTIES.	*Wakefield	29·883	48·3	47·0	47·7	40·9	54·9	47·9	24·8	6th	63·6	31st
	*Buxton	29·882	45·7	42·5	44·1	37·4	51·4	44·4	22·0	6th	59·5	31st
	*Cheadle	29·881	46·3	44·4	45·3	38·8	53·0	45·9	28·3	4th	61·0	31st
	Leicester	29·877	49·2	48·3	48·8	41·0	55·4	48·2	28·5	4th	66·0	31st
	Uppingham	29·876	48·2	44·6	46·4	39·0	55·7	47·4	27·0	4th	68·2	31st
	Oscott	29·872	47·6	45·9	46·8	40·2	55·4	47·8	27·3	4th	65·5	31st
	*Churchstoke	29·883	47·0	44·8	45·9	39·1	54·3	46·7	28·5	3rd	67·2	31st
	*Hereford	29·869	49·7	46·7	48·2	40·4	56·3	48·4	26·4	5th	63·2	31st
5. ENGLAND, S.	*Marlborough	29·893	49·7	46·4	48·1	39·9	56·8	48·4	25·8	5th	64·5	26th
	*Strathfield Turgiss	29·893	51·3	47·0	49·2	39·9	58·1	49·0	26·0	5th	65·3	26th
	*Ramsgate	29·858	51·3	47·7	49·5	44·5	56·0	50·3	33·0	3rd	62·7	31st
	Folkestone	29·884	51·1	46·7	48·9	43·1	55·3	49·2	30·8	5th	64·8	8th
	Hastings	29·893	50·7	46·9	48·8	43·1	54·8	49·0	31·2	5th	61·4	8th
6. SCOTLAND, W.	—	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND, N.W.	*Hawes	29·891	45·4	42·0	43·7	36·8	51·1	44·0	21·5	4th	61·0	31st
	Prestwich	29·873	47·6	45·9	46·8	40·4	53·6	47·0	28·4	4th	63·6	31st
	*Llandudno	29·861	50·9	47·0	48·9	43·1	57·3	50·2	34·0	4th, 5th	68·5	8th
8. ENGLAND, S.W.	*Caermarthen	29·855	52·4	47·0	49·7	42·0	57·5	49·8	29·5	5th	64·2	25th
	*Dartmoor	29·892	45·6	42·5	44·1	38·4	50·6	44·5	27·4	5th	60·2	25th
	*Babbacombe	29·883	50·4	47·7	49·1	43·5	56·1	49·8	36·3	3rd	63·6	31st
9. IRELAND, N.	Markree Castle	29·842	49·7	46·7	48·2	39·5	56·3	47·9	29·2	5th	61·6	31st
10. IRELAND, S.	Dublin	29·870	50·6	48·5	49·6	44·1	55·3	49·7	33·9	5th	63·5	26th
	Parsonstown	29·857	51·6	47·1	49·4	42·0	57·7	49·9	28·1	5th	63·5	26th
CHANNEL	Jersey (St. Aubin's)	29·923	52·1	48·8	50·5	45·5	55·4	50·5	39·0	3rd	63·9	31st

NOTE.—The stations marked thus * are in connexion with the Royal Meteorological Society.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS during the Month of MAY 1877.
corrected for Diurnal Range.
Latitude, beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10).			RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	%	%	%				ins.	in.																	
·237	·237	·237	79	87	83	6·7	6·0	6·4	2·730	·790	26th	19	4	2	0	4	12	0	9	10	11	9	4	6	5	7	1
·256	·245	·251	83	89	86	6·4	6·5	6·5	3·560	·810	17th	14	1	0	1	0	10	3	4	14	13	4	2	9	11	5	0
·268	·264	·266	82	89	86	6·5	6·4	6·5	2·593	·450	11th	17	2	2	2	1	11	0	13	7	7	4	10	7	4	2	8
·267	·252	·260	79	91	85	8·3	6·5	7·4	3·184	·500	17th	16	2	1	1	1	14	0	10	14	7	3	10	9	5	4	0
·288	·270	·279	82	87	85	7·7	5·7	6·7	1·370	·470	17th	16	1	0	0	1	12	1	5	18	6	3	1	6	8	6	9
·297	·277	·287	90	96	93	8·2	6·5	7·4	1·855	·374	17th	19	1	0	2	0	14	0	5	13	12	5	3	7	11	2	4
·286	·268	·277	78	90	84	7·7	6·6	7·2	1·393	·307	19th	16	2	4	2	2	14	1	6	18	4	8	2	16	3	3	2
·282	·270	·276	77	86	81	7·5	5·0	6·3	1·860	·410	12th	20	0	2	3	2	13	0	6	11	2	8	0	14	3	12	6
·283	·268	·276	78	82	80	7·9	7·0	7·5	1·800	·300	19th	13	0	0	2	2	14	0	9	6	15	8	5	11	5	1	2
·271	·285	·278	80	87	84	7·3	6·7	7·0	2·470	·550	16th	15	0	1	1	2	16	0	11	7	8	1	2	8	6	1	18
·251	·238	·245	81	86	84	8·1	7·4	7·8	4·845	·930	18th	15	0	1	2	0	15	0	3	8	19	6	5	4	8	7	2
·240	·238	·239	76	81	79	8·4	6·7	7·5	3·420	·680	16th	16	1	2	4	2	15	2	8	13	10	6	3	7	3	7	5
·253	·257	·255	72	76	74	8·2	6·6	7·4	2·140	·390	31st	16	0	0	1	1	18	0	1	26	6	2	4	14	6	3	0
·264	·257	·261	78	86	82	9·0	6·2	7·6	2·229	·590	9th	17	0	1	1	0	17	2	7	15	8	4	2	8	9	2	7
·258	·260	·259	78	83	81	8·7	6·1	7·4	2·460	·490	14th	17	0	0	1	2	18	2	10	17	9	4	7	8	5	2	0
·263	·261	·262	81	87	84	7·5	5·3	6·4	2·605	·503	18th	15	0	1	1	3	11	0	9	7	7	7	6	7	5	4	10
·255	·262	·259	71	81	76	7·7	5·8	6·8	2·395	·450	11th	14	0	0	0	3	15	0	2	13	7	5	3	5	6	1	20
·262	·261	·262	73	82	78	7·2	6·2	6·7	2·588	·466	12th	14	0	0	0	2	13	0	14	3	5	1	4	5	8	1	21
·270	·264	·267	71	81	76	7·4	5·8	6·6	2·128	·447	16th	14	0	0	1	2	13	0	5	13	6	4	6	9	9	4	6
·287	·283	·285	75	84	80	7·5	6·5	7·0	2·413	·414	19th	19	0	4	0	0	10	2	6	20	1	6	0	20	1	7	1
·311	·288	·300	83	90	87	6·7	6·1	6·4	2·150	·300	27th	15	1	2	1	2	8	0	16	10	4	2	10	10	7	0	3
·289	·277	·283	77	85	81	6·4	5·7	6·1	2·335	·500	10th, 17th	16	0	0	0	5	10	1	7	18	3	3	5	14	8	0	4
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·238	·236	·237	78	86	82	8·6	7·0	7·8	3·540	·940	27th	19	3	4	1	1	18	0	6	9	15	1	0	8	12	1	10
·236	·244	·240	71	79	75	8·0	8·1	8·1	3·152	·525	16th	16	0	1	2	1	20	0	11	10	10	6	5	4	8	4	4
·272	·262	·267	73	81	77	6·5	5·1	5·8	2·315	·552	10th	13	0	0	2	7	10	2	3	5	31	3	6	3	11	0	0
·304	·284	·294	77	88	82	6·5	5·1	5·8	4·430	1·770	27th	16	0	0	1	5	11	0	4	7	14	5	8	7	7	2	8
·264	·253	·259	86	92	89	7·9	6·5	7·2	7·580	1·660	16th	17	1	0	0	0	14	5	2	7	14	8	5	9	11	4	2
·282	·276	·279	76	83	80	7·0	5·3	6·2	3·280	·720	16th	19	0	0	0	2	11	3	5	10	11	5	5	11	8	3	4
·269	·259	·264	74	81	78	7·3	7·8	7·6	2·212	·487	14th	19	0	2	0	0	12	0	3	11	13	10	2	10	5	7	1
·271	·272	·272	73	79	76	7·2	5·4	6·3	2·343	·440	16th	18	0	1	1	0	8	1	4	11	16	5	4	6	13	2	1
·291	·276	·284	76	85	81	7·3	6·6	7·0	2·075	·489	27th	15	0	0	0	1	11	0	3	8	7	15	1	10	8	5	5
·297	·292	·295	76	84	80	6·2	4·2	5·2	2·155	·427	10th	18	0	0	1	3	5	0	2	21	4	5	3	11	7	2	7

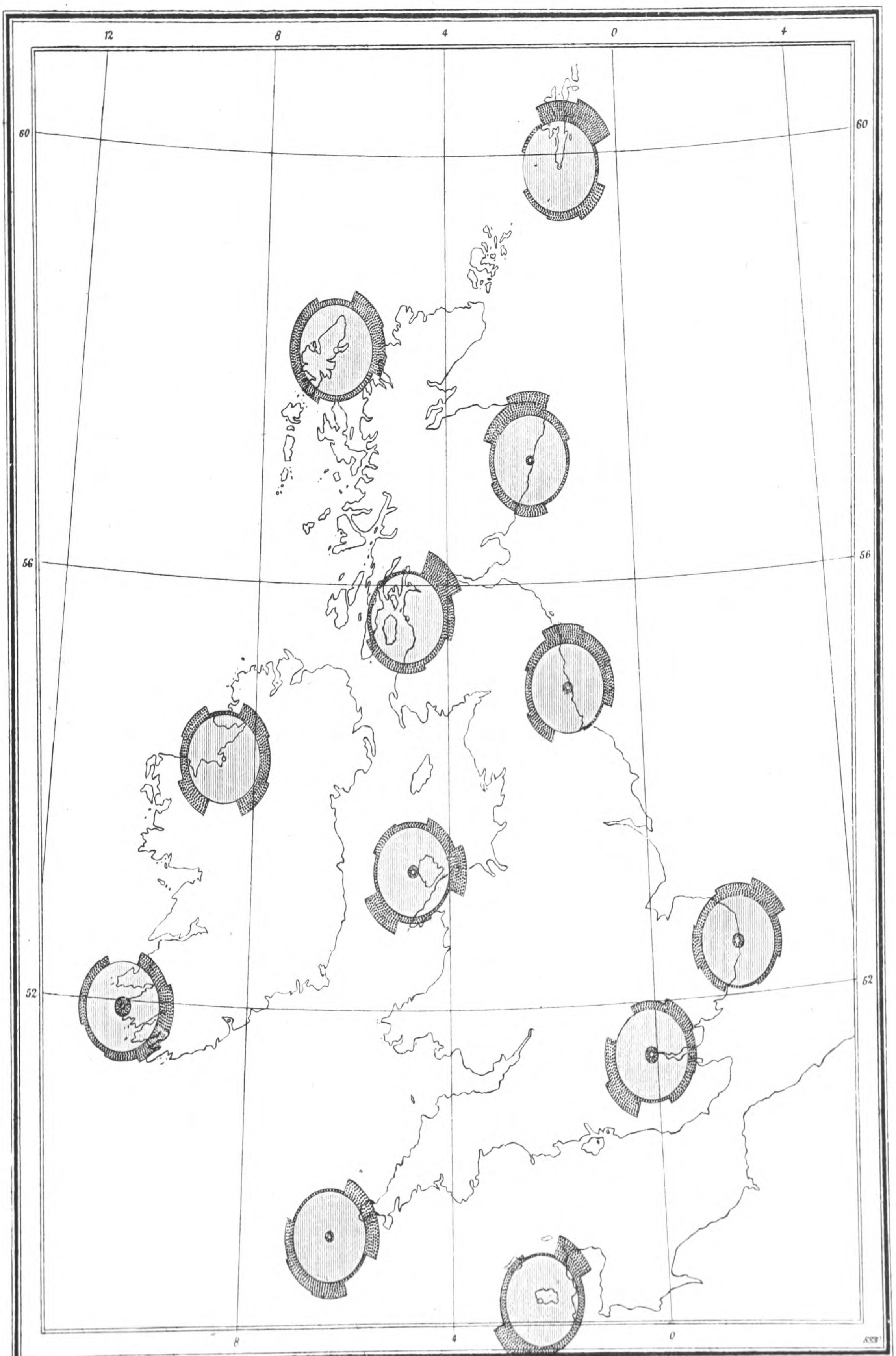
† At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

TABLE C., MAY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the month of MAY 1877. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.								TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
				Means of			Absolute Extremes.																									
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
		ins.	°	°	°	°	°		°		in.	%		ins.	in.																	
0. SCOTLAND, N.	Sumburgh Head	29.854	43.5	37.5	47.6	42.6	27	2nd	54	31st	0.233	81	7.2	1.35	0.37	28th	14	5	5	0	3	14	1	8	10	1	5	3	2	0	2	0
	Thurso	29.849	45.2	40.2	51.8	46.0	26	3rd	63	16th, 27th	.251	84	7.7	3.66	0.70	26th	22	5	0	0	3	16	0	6	5	2	4	3	1	5	2	3
	Wick	29.853	44.6	38.6	50.9	44.8	26	3rd	57	27th	.250	85	8.1	3.81	1.03	26th	17	4	0	0	4	20	0	4	5	5	2	5	1	6	2	1
	Stornoway	29.845	46.7	39.1	51.3	45.2	27	5th	59	14th, 15th	.268	85	6.4	3.52	0.85	26th	18	2	1	0	7	14	5	2	7	6	2	2	4	4	4	0
1. SCOTLAND, E.	Nairn	29.862	45.2	39.8	51.9	45.9	27	3rd	63	16th, 27th	.224	75	5.1	2.73	0.98	18th	13	3	2	2	12	10	0	0	4	7	0	0	3	10	2	5
	Aberdeen	29.845	45.5	40.6	51.0	45.8	31	3rd, 5th	60	30th	.229	75	5.8	2.83	0.54	17th	16	4	1	0	10	12	1	10	3	1	1	4	3	2	6	1
	Leith	29.864	47.4	40.3	55.3	47.8	33	2nd, 4th, 8th.	66	24th	.256	79	5.4	2.00	0.67	17th	12	0	1	0	5	6	1	2	5	7	2	1	4	6	4	0
2. ENGLAND, N.E.	Shields	29.877	45.7	41.5	50.5	46.0	32	4th, 6th	60	16th, 26th 28th.	.249	82	7.3	1.96	0.37	11th	14	3	1	1	4	16	2	8	6	5	1	0	5	2	3	1
	Scarborough	29.875	47.5	42.2	51.2	46.7	33	6th, 7th	62	28th	.273	83	6.3	1.84	0.38	11th	15	1	2	0	7	12	0	8	4	2	2	1	7	3	1	3
	York	29.884	46.9	40.1	54.7	47.4	27	4th, 6th	64	16th	.252	79	6.8	2.31	0.62	17th	15	3	3	2	8	17	1	7	6	3	2	4	3	5	1	0
3. ENGLAND, E.	Yarmouth	29.890	48.2	43.2	53.0	48.1	33	5th	66	27th	.281	84	5.2	1.71	0.36	21st	17	1	1	1	12	8	1	5	8	3	2	1	3	4	3	2
	Cambridge	29.889	48.9	39.8	58.5	49.2	25	4th, 5th	67	8th, 27th	.277	80	7.4	1.54	0.28	18th	21	0	0	1	6	18	0	6	8	3	1	2	9	0	1	1
4. MIDLAND COUNTIES.	Nottingham	29.903	48.2	40.1	57.5	48.8	27	6th	69	31st	.265	79	8.1	2.73	0.55	10th	16	0	1	5	4	21	1	9	5	1	3	5	5	1	1	1
	Oxford	29.893	48.7	41.5	58.3	49.9	28	4th, 5th	67	26th	.279	81	8.0	2.10	0.39	31st	16	0	0	0	3	19	0	5	2	4	2	2	5	3	1	7
5. ENGLAND, S.	London	29.893	49.9	42.1	57.8	50.0	29	5th	67	8th	.273	77	7.3	1.55	0.28	16th	15	0	0	0	4	16	1	3	5	4	3	1	8	5	0	2
	Dover	29.884	50.6	45.8	55.1	50.5	36	3rd	62	31st	.289	78	4.8	2.42	0.65	19th	16	0	0	0	9	2	0	4	9	2	0	3	8	3	1	1
	Hurst Castle	29.894	49.9	43.9	54.4	49.2	33	5th	60	17th	.349	97	7.3	2.79	0.68	16th	14	0	0	0	6	17	1	1	8	5	3	1	4	6	1	2
6. SCOTLAND, W.	Ardrossan	29.866	46.9	41.9	55.5	48.7	32	2nd	63	8th, 31st	.242	76	6.4	2.34	0.61	31st	15	0	0	0	5	14	4	1	11	5	2	4	4	2	2	0
7. ENGLAND, N.W.	Liverpool	29.872	47.4	42.2	56.0	49.1	33	4th, 6th	69	31st	.245	76	7.1	1.98	0.35	18th	15	0	0	0	3	13	1	1	7	9	2	2	4	5	1	0
	Holyhead	29.859	48.1	44.7	54.9	49.8	38	4th	64	8th	.303	91	6.3	2.56	1.17	27th	15	0	0	2	8	11	2	2	5	9	1	2	8	1	2	1
8. ENGLAND, S.W.	Pembroke	29.858	48.7	44.4	55.1	49.8	35	5th	62	26th	.277	80	4.6	2.42	0.85	27th	12	0	0	0	12	8	2	1	3	9	4	2	5	4	1	2
	Portishead	29.880	48.3	41.3	57.8	49.6	29	5th, 6th	66	8th, 31st	.272	81	6.7	1.97	0.53	16th	12	0	0	0	5	12	4	8	7	1	2	3	4	4	1	1
	Plymouth	29.880	50.2	44.1	57.6	50.9	36	3rd, 5th	63	25th, 26th 30th.	.305	84	6.5	3.04	0.76	16th	13	0	0	0	9	16	1	4	5	6	6	1	5	2	2	0
9. IRELAND, N.	Greencastle	29.833	47.7	40.9	54.7	47.8	32	4th, 7th	63	26th	.260	79	6.5	2.00	0.47	14th	15	0	0	0	8	16	0	2	4	8	2	6	4	5	0	0
	Donaghadee	29.858	47.5	42.8	53.7	48.3	35	7th	61	26th	.276	84	5.2	2.57	0.51	31st	16	0	1	1	11	11	3	4	6	8	4	1	4	3	1	0
10. IRELAND, S.	Kingstown	29.864	48.7	45.6	53.7	49.7	39	5th	62	26th	.268	78	6.4	1.92	0.48	31st	16	0	0	0	5	13	2	2	3	8	4	4	2	4	4	0
	Valencia	29.838	51.5	43.7	56.7	50.2	34	5th, 7th	62	21st	.286	75	5.9	3.19	0.70	31st	16	0	0	0	5	8	4	0	5	7	5	3	2	3	3	3
	Roche's Point	29.852	50.7	45.2	57.9	51.6	37	5th	62	24th, 26th	.291	79	5.5	4.23	0.95	31st	14	0	0	0	7	8	2	7	3	5	6	2	2	4	2	0
CHANNEL	Scilly	29.873	51.6	47.2	55.0	51.1	41	5th	59	11th, 14th, 15th, 26th, 30th.	.313	81	8.2	3.03	0.85	27th	13	0	0	0	0	17	4	1	6	6	1	6	5	4	1	1

MONTHLY WIND CHART FOR MAY 1877.

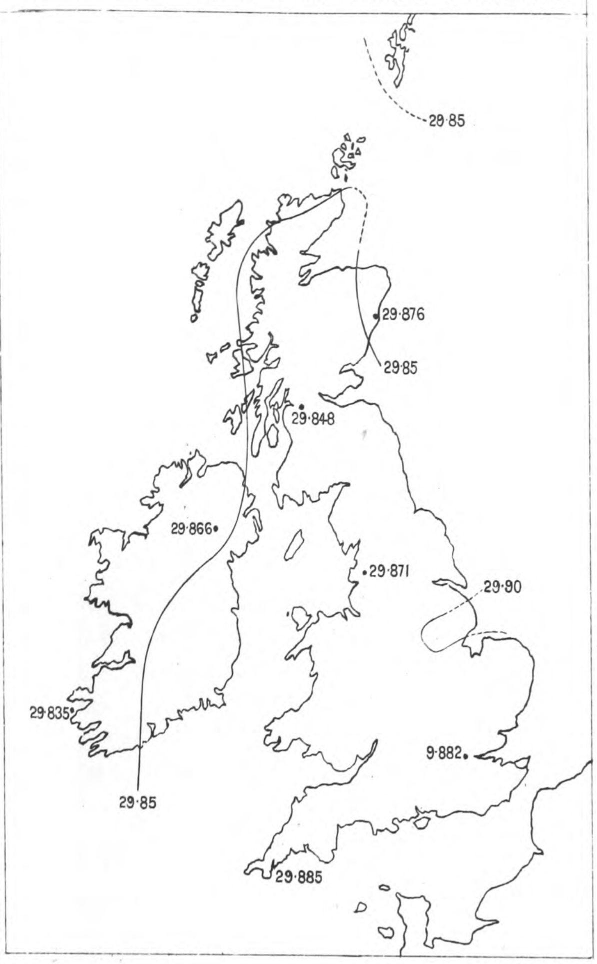

12
8
4
0
4
60
60
56
56
52
52
8
4
0

To face p. 74.

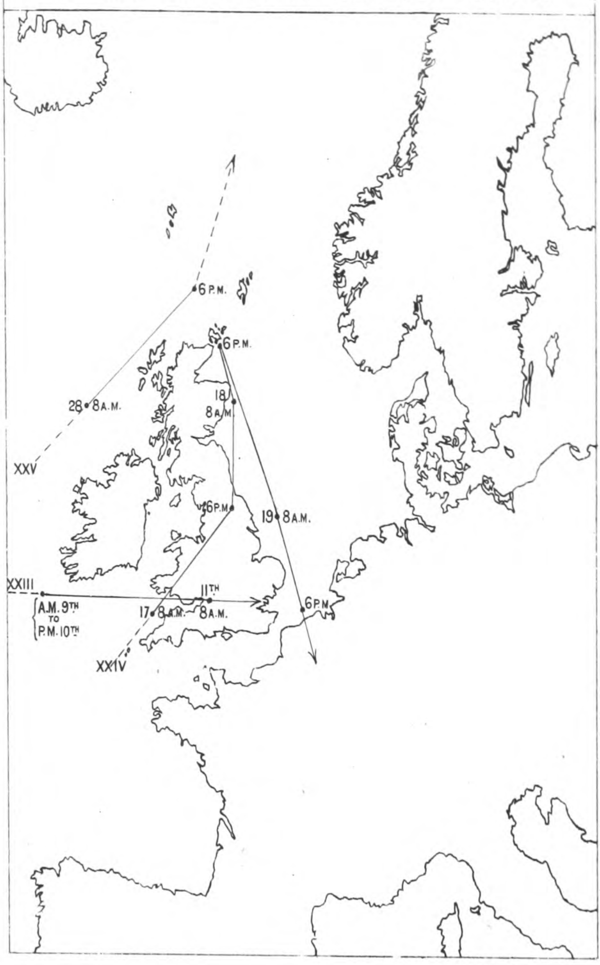
DANGERFIELD LITH 22 BEDFORD S^T COVENT GARDEN.

MONTHLY WEATHER CHART MAY 1877.

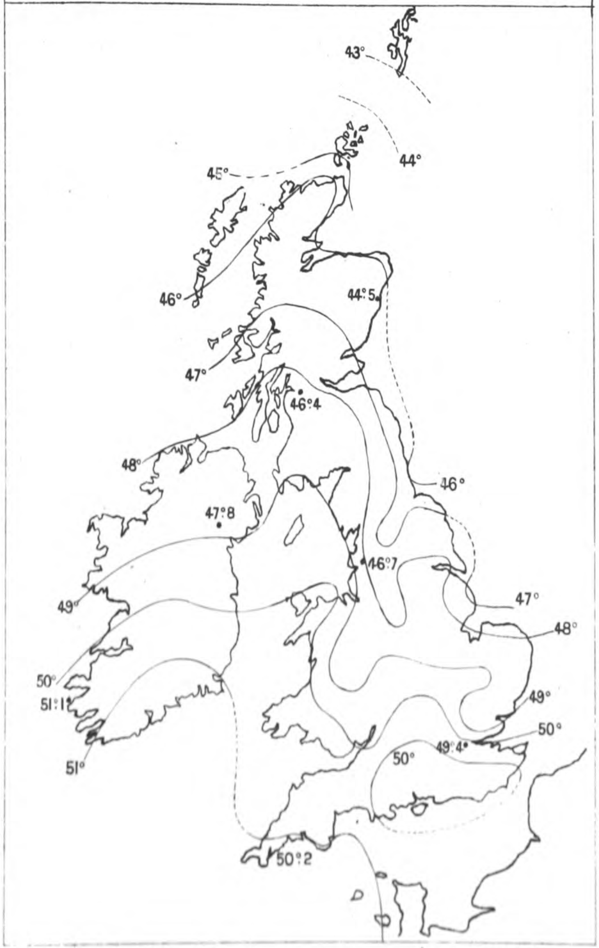
1. DISTRIBUTION OF MEAN PRESSURE


29·85
29·876
29·85
29·848
29·866
29·871
29·90
29·835
9·882
29·85
29·885

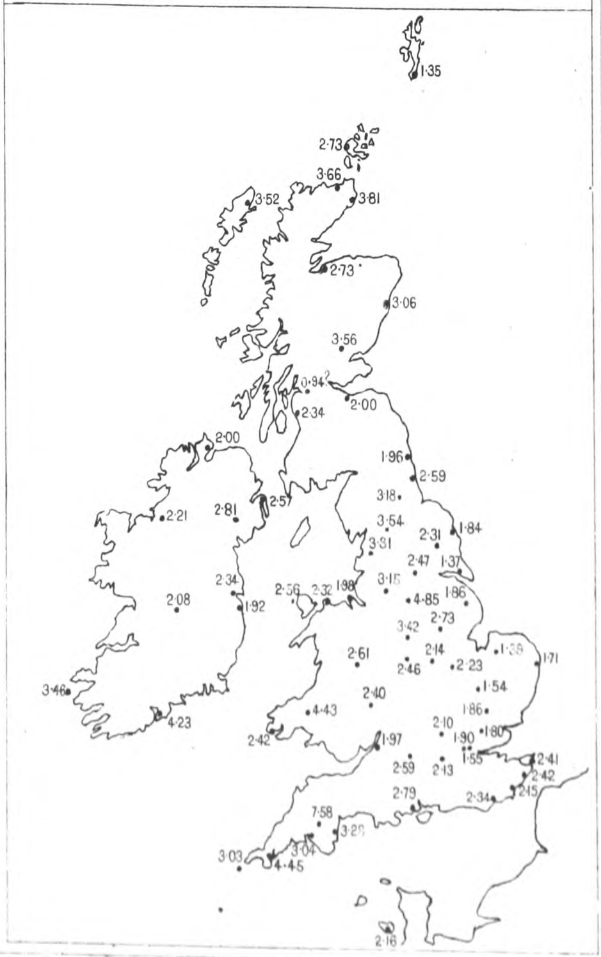
2. MOVEMENTS OF DEPRESSIONS.


6 P.M.
6 P.M.
28 8 A.M.
XXV
18
8 A.M.
6 P.M.
19 8 A.M.
XXIII
A.M. 9TH TO P.M. 10TH
11TH
17 8 A.M.
8 A.M.
6 P.M.
XXIV

3. DISTRIBUTION OF MEAN TEMPERATURE.


43°
44°
45°
46°
44°·5
47°
46°·4
48°
46°
47°·8
46°·7
47°
48°
49°
50°
51°·1
51°
49°
50°
49°·4
50°
50°·2

4. RAINFALL


1·35
2·73
3·66
3·52
3·81
2·73
3·06
3·56
0·94?
2·00
2·34
2·00
1·96
2·59
3·18
2·21
2·81
2·57
3·54
2·31
1·84
3·31
2·47
1·37
2·34
2·56
2·32
1·98
3·15
4·85
1·86
2·08
1·92
2·73
3·42
2·61
2·14
2·46
2·23
1·39
1·71
3·46
1·54
2·40
4·43
4·23
1·86
2·10
1·90
1·80
2·42
1·97
1·55
2·41
2·59
2·13
2·42
2·79
2·34
2·15
7·58
3·28
3·04
3·03
4·45
2·16

8830

To follow Wind Chart for May.

Dangerfield Lith 22. Bedford S. Covent Garden

REMARKS FOR JUNE 1877.

(*Tables A. to C.*, JUNE, *with Monthly Wind and Weather Charts.*)

Wind.—On the morning of the 1st the centre of a depression lay over St. George's Channel, and while fresh East and South-east winds blew on the northern and eastern coasts, very strong South-westerly and Westerly gales prevailed in the south and west of England. In the course of the day a general shift to West took place, and for nearly a fortnight the wind continued to blow, as a rule, from between South and West, and at times attained very considerable force. On the 12th an anticyclonic current set in, and for several days Easterly winds—South-east to North-east—prevailed all over the kingdom, but during this interval the force of the wind was never very great, and calms and light variable airs occurred rather frequently, especially towards its close. On the 22nd another marked change took place and the wind generally veered through West to North-west and North, with the passage of a shallow depression over Great Britain. An anticyclone was, however, being formed to the south-west of our Islands, and concurrently with its development the wind backed, and North-westerly and Westerly winds became general. On the 28th they backed as far as South-west, on the arrival of a depression to the north-west of Scotland, but as this passed away they veered again to West and continued to blow from that quarter till the end of the month. From the Monthly Chart it will be seen that, upon the whole, the prevailing wind was South-westerly, and that the marked predominance of Northerly and Easterly winds seen in the first two months of the quarter had quite disappeared.

Pressure.—The mean pressure ranged from 30·03 inches at the estuary of the Thames to 29·80 inches at the Hebrides. The lowest readings occurred, all over the country, on the 1st, in connection with depression No. XXVI., but they were nowhere very low, 29·08 inches at Valencia being the lowest recorded, while at Kew the barometer did not fall below 29·41 inches. At the northern stations the barometer reached its highest point on the 16th, at which time an area of high pressure existed over southern Scandinavia; but at the southern and Irish stations it occurred at the end of the month, when an anticyclone lay over the entrance to the Channel. The range of pressure was small, amounting to only 1·2 inch at Valencia, and to less at the other stations.

Movements of the Depressions.—These were not numerous, and travelled in most instances in a northerly direction past our western and north-western coasts. One shallow depression, however, passed across the kingdom to Sweden, and towards the close of the month another made its appearance over Scandinavia, travelling eastwards, but at too great a distance to be felt in the British Isles. At the beginning of the month an area of high pressure existed over the Peninsula, from whence it gradually moved northwards to Germany, and then, before it dispersed, spread itself in a north-westerly direction over the North Sea and Norway. It was followed soon afterwards by another system which became developed to the south-west of our Islands, and remained over the Channel and northern France till the close of the month.

Temperature.—The distribution of mean temperature, as shown by the Chart, was normal, ranging from 61° over the south-eastern and midland districts of England (in London it was as high as 63°·4), to 53° in the north of Scotland and 48° in the Shetlands. Both the highest and lowest readings occurred at irregular dates; the former, however, were most generally registered about the 18th and 19th, while the latter were in most cases observed during the westerly anticyclonic winds which prevailed about the 7th and 24th. 85° was recorded at London, Uppingham, and Strathfield Turgiss; and while the minima did not in many cases fall below 40°, the exceptionally low reading of 32°·5 was registered at Glenalmond on the 16th. The range of temperature was in most places considerable, especially over the Midlands and southern England.

Vapour Tension was greatest over the Channel and least over Scotland, low values being also found over the north-west of England. *Relative Humidity* was rather irregularly distributed, but the highest values were reported from Scilly, the coast of Wales, and the Hebrides.

Rainfall.—The fall of rain was slight over the greater portion of Great Britain, but somewhat exceeded the average in the north of Scotland and in some parts of Ireland. Falls of upwards of an inch in 24 hours occurred at several places in the south of England, and also at Hawes Junction and Parsonstown. The heaviest daily amounts recorded were 1·71 inches at Hastings and 1·49 inches at Folkestone, both on the 11th, and 1·41 inches at Parsonstown on the 21st.

TABLE A., JUNE.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of JUNE 1877; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).								TEMPERATURE In the Shade (In Degrees Fahrenheit).								HYGROMETRIC VALUES.		RAINFALL (In English Inches).
	Mean for the Month.	Extremes.						Range.	Mean for the Month.	Extremes.						Range.	Tension of Vapour (In English Inches).	Relative Humidity (Saturation=100).	
		Minimum.			Maximum.					Minimum.			Maximum.						
		Reading.	Date.		Reading.	Date.				Reading.	Date.		Reading.	Date.					
	ins.	ins.	D.	H.	ins.	D.	H.	ins.	°	°	D.	H.	°	D.	H.	°	in.	%	ins.
Valencia - -	29·936	29·077	1st,	1 a.m.	30·278	30th,	9 a.m.	1·201	57·3	47·3	24th,	4 a.m.	74·4	17th,	Noon	27·1	·388	83	4·209
Armagh - -	·926	·179	1st,	5 a.m.	·221	28th,	5 a.m.	1·042	56·7	42·1	24th,	4 a.m.	74·0	20th,	3 p.m.	31·9	·363	79	2·970
Glasgow - -	·888	·156	1st,	2 p.m.	·245	16th,	8 a.m.	1·089	55·2	43·2	12th,	4 a.m.	72·7	17th,	5 p.m.	29·5	·325	75	2·711*
Aberdeen - -	29·901	·183	1st,	8 p.m.	·301	16th,	10 a.m.	1·118	52·9	39·8	13th,	3 a.m.	65·9	29th,	3 p.m.	26·1	·312	78	3·490
Falmouth - -	30·014	·121	1st,	6 a.m.	·301	28th,	7 a.m.	1·180	58·4	47·6	7th,	5 a.m.	70·9	29th,	2 p.m.	23·3	·399	81	2·565
Stonyhurst -	29·968	·191	1st,	Noon	·252	16th,	8 a.m.	1·061	57·3	40·9	24th,	4 a.m.	76·3	18th,	3 p.m.	35·4	·346	74	2·615
Kew - -	30·015	29·412	1st,	11 a.m.	30·283	28th,	8 a.m.	0·871	61·6	45·0	7th,	4 a.m.	81·2	11th,	5 p.m.	36·2	·376	69	1·542

* The sums for four days are doubtful.

TABLE B., JUNE.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not

(The Stations are grouped in Districts, and then arranged in order of

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	AIR TEMPERATURE.									
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Means of			Absolute Extremes.			
						Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°	°	°		°	
0. SCOTLAND, N.	Sandwick Manse (Orkneys)	29·843	52·4	51·0	51·7	46·3	56·8	51·6	42·8	22nd	66·9	17th
1. SCOTLAND, E.	Glenalmond	29·911	54·7	50·7	52·7	44·2	61·8	53·0	32·5	16th	72·2	17th
2. ENGLAND, N.E.	Seaham	29·938	58·2	53·6	55·9	49·2	64·0	56·6	39·8	15th	75·2	3rd
	†Durham	29·941	60·8	51·5	56·2	47·6	67·0	57·3	38·5	16th	76·6	28th
	Hull	30·000	60·4	56·7	58·6	50·4	69·2	59·8	43·0	15th	79·5	3rd
	*Kelstern	30·006	59·2	54·4	56·8	48·1	65·8	57·0	40·8	8th	75·8	29th
3. ENGLAND, E.	*Hillington	30·032	63·2	56·0	59·6	48·5	72·3	60·4	40·1	8th	82·1	29th
	*Audley End	30·025	64·1	56·6	60·4	48·0	71·8	59·9	38·0	24th	81·8	18th
	Chigwell Row	30·060	62·3	59·4	60·9	51·2	69·5	60·4	42·8	24th	79·0	29th
4. MIDLAND COUNTIES.	*Wakefield	29·997	59·3	57·9	58·6	50·2	67·9	59·1	42·1	16th	77·8	3rd
	*Buxton	29·995	57·3	53·6	55·5	46·6	63·9	55·3	40·0	7th	78·9	19th
	*Cheadle	30·004	56·8	55·9	56·4	47·9	65·1	56·5	39·0	24th	76·6	18th
	Leicester	29·997	60·7	60·1	60·4	49·9	69·1	59·5	41·8	24th	79·4	18th
	Uppingham	30·003	60·3	56·3	58·3	47·4	70·1	58·8	40·1	24th	85·1	18th
	Oscott	29·991	59·3	57·2	58·3	49·2	68·2	58·7	41·9	24th	79·6	29th
	*Churchstoke	30·001	57·7	56·5	57·1	49·4	66·5	58·0	40·6	24th	76·3	19th
	*Hereford	29·992	59·7	57·9	58·8	50·9	68·3	59·6	41·7	24th	78·4	18th
5. ENGLAND, S.	*Marlborough	30·027	61·6	58·2	59·9	50·4	70·5	60·5	40·7	24th	81·8	18th
	*Strathfield Turgiss	30·031	63·7	58·3	61·0	49·3	72·5	60·9	41·9	24th	85·4	18th
	*Ramsgate	30·015	62·0	58·1	60·1	53·4	68·1	60·8	45·2	7th	76·3	19th
	Folkestone	30·037	62·4	57·0	59·7	52·6	67·8	60·2	44·4	7th	78·6	18th
	Hastings	30·035	62·2	57·7	60·0	52·7	67·6	60·2	44·9	7th	76·5	18th
6. SCOTLAND, W.	—	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND, N.W.	*Hawes	29·986	56·0	52·0	54·0	46·4	63·6	55·0	36·5	24th	77·7	20th
	Prestwich	29·978	58·6	56·2	57·4	49·5	66·1	57·8	40·8	24th	77·1	18th
	*Llandudno	29·965	60·8	57·4	59·1	52·9	67·4	60·2	47·0	24th	80·9	21st
8. ENGLAND, S.W.	*Caermarthen	29·982	61·5	56·9	59·2	52·2	67·5	59·9	43·2	25th	79·8	18th
	*Dartmoor	30·024	57·2	52·1	54·7	48·2	62·1	55·2	41·6	7th	75·6	18th
	*Babbacombe	30·022	60·0	56·0	58·0	52·3	65·9	59·1	44·6	25th	76·0	29th
9. IRELAND, N.	Markree Castle	29·913	59·1	54·5	56·8	47·8	64·5	56·2	35·6	24th	77·0	18th
10. IRELAND, S.	Dublin	29·960	60·5	56·9	58·7	51·9	65·0	58·5	44·0	24th	72·3	28th
	Parsonstown	29·944	59·4	56·3	57·9	51·9	66·5	59·2	40·8	4th	80·5	18th
CHANNEL	Jersey (St. Aubin's)	30·062	62·8	57·0	59·9	52·8	68·5	60·7	47·0	7th	77·2	30th

NOTE.—The Stations marked thus * are in connection with the Royal Meteorological Society.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of JUNE 1877.
corrected for Diurnal Range.
Latitude, beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10).			RAINFALL.			WEATHER, No. of Days of							WIND. No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	%	%	%				ins.	in.																	
·309	·309	·309	79	82	81	4·8	4·8	4·8	3·380	·970	21st	16	0	2	0	8	5	0	2	0	9	11	9	12	10	5	2
·338	·328	·333	79	88	84	6·4	6·5	6·5	5·290	·950	21st	18	0	0	0	4	10	0	2	0	14	10	0	13	17	2	2
·382	·361	·372	79	88	84	5·4	5·3	5·4	1·420	·370	22nd	13	0	0	0	10	12	0	2	2	3	7	10	17	5	3	11
·380	·343	·362	72	89	81	6·1	5·1	5·6	1·693	·401	22nd	12	0	0	0	5	9	1	1	8	4	6	14	17	6	3	1
·383	·384	·384	73	84	79	5·3	4·0	4·7	1·790	·590	11th	13	0	0	0	10	5	1	1	10	6	4	1	15	11	5	7
·414	·395	·405	82	93	88	5·7	5·2	5·5	1·222	·207	21st	10	0	0	2	5	5	1	3	5	14	1	6	13	11	3	4
·407	·387	·397	71	86	78	5·3	5·5	5·4	1·550	·535	30th	11	0	0	2	4	8	0	4	4	12	8	2	25	3	2	0
·390	·378	·384	65	82	74	5·1	3·8	4·5	1·340	·850	30th	9	0	0	3	6	3	0	0	14	2	4	2	18	7	8	5
·381	·376	·379	68	74	71	5·1	5·2	5·2	0·550	·360	11th	5	0	0	3	4	3	0	1	4	18	5	6	16	5	5	0
·353	·364	·359	70	76	73	6·3	4·7	5·5	1·750	·470	1st	10	0	0	1	3	10	1	1	5	11	1	7	7	13	0	15
·324	·331	·328	70	81	75	6·4	7·1	6·8	3·840	1·000	1st	13	0	0	1	3	13	0	1	0	10	11	0	8	20	9	1
·346	·342	·344	75	77	76	7·1	5·4	6·3	1·960	·480	22nd	11	0	0	6	4	10	0	3	7	11	3	8	12	9	6	1
·357	·363	·360	67	70	69	6·5	5·9	6·2	0·810	·230	22nd	9	0	0	0	6	11	1	5	9	11	2	7	15	7	3	1
·400	·383	·392	76	84	80	7·0	5·5	6·3	1·121	·286	21st	8	0	0	1	3	9	2	3	9	11	1	4	13	12	6	1
·376	·370	·373	75	79	77	7·4	5·5	6·5	0·810	·260	21st	9	0	0	2	4	13	0	5	11	7	0	9	18	3	6	1
·377	·392	·385	79	85	82	6·1	5·0	5·6	1·824	·593	1st	12	0	0	0	4	6	0	2	3	2	7	8	11	6	4	17
·386	·377	·382	76	78	77	6·8	5·0	5·9	0·881	·310	21st	10	0	0	0	4	8	0	1	3	6	3	4	10	7	2	24
·379	·379	·379	70	78	74	5·8	4·7	5·3	1·115	·564	1st	8	0	0	2	8	8	0	2	4	8	2	7	13	2	2	20
·390	·388	·389	66	79	73	5·0	4·7	4·9	1·494	1·038	21st	7	0	0	4	8	6	0	0	0	9	9	5	18	9	3	7
·421	·396	·409	76	83	79	5·3	5·7	5·5	1·663	1·010	11th	9	0	0	2	4	4	2	0	18	4	5	4	19	5	5	0
·435	·415	·425	77	89	83	4·8	4·5	4·7	2·500	1·490	11th	8	0	0	6	7	4	1	5	12	9	2	15	10	2	3	2
·406	·389	·398	73	82	78	4·0	4·0	4·0	2·070	1·710	11th	8	0	0	6	12	4	2	2	18	4	2	6	14	10	2	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·348	·336	·342	78	87	82	7·9	6·6	7·3	4·190	1·310	1st	19	0	0	3	4	17	0	1	1	14	2	1	12	19	2	8
·340	·347	·344	69	76	73	7·0	6·8	6·9	2·156	·700	26th	13	0	1	2	3	14	0	2	5	8	3	10	14	10	0	8
·369	·365	·367	69	77	73	6·6	7·1	6·9	1·590	·325	18th	11	0	0	1	4	16	1	3	6	11	3	4	9	22	2	0
·433	·422	·428	80	91	85	6·4	6·7	6·6	2·910	·840	1st	18	0	0	1	6	14	0	5	6	10	1	10	14	7	1	6
·381	·360	·371	82	92	87	6·8	6·3	6·6	4·060	1·040	6th	12	0	0	1	4	13	6	0	0	13	1	4	10	11	5	16
·397	·376	·387	77	83	80	6·6	5·6	6·1	1·240	·360	21st	11	0	0	1	4	9	1	1	10	9	4	1	16	10	5	4
·379	·363	·371	76	85	80	7·1	7·6	7·4	2·940	·750	24th	20	0	0	2	1	11	0	4	0	4	11	8	12	4	11	6
·381	·363	·372	72	78	75	6·1	5·3	5·7	0·921	·237	6th	12	0	0	2	4	6	0	1	8	9	2	6	10	18	3	3
·415	·403	·409	81	88	85	7·7	7·5	7·6	3·733	1·407	21st	16	0	0	2	2	16	0	2	3	2	7	5	15	10	4	12
·432	·396	·414	76	85	80	5·3	2·9	4·1	0·435	·172	21st	7	0		3	9	3	1	5	13	2	5	1	12	7	5	10

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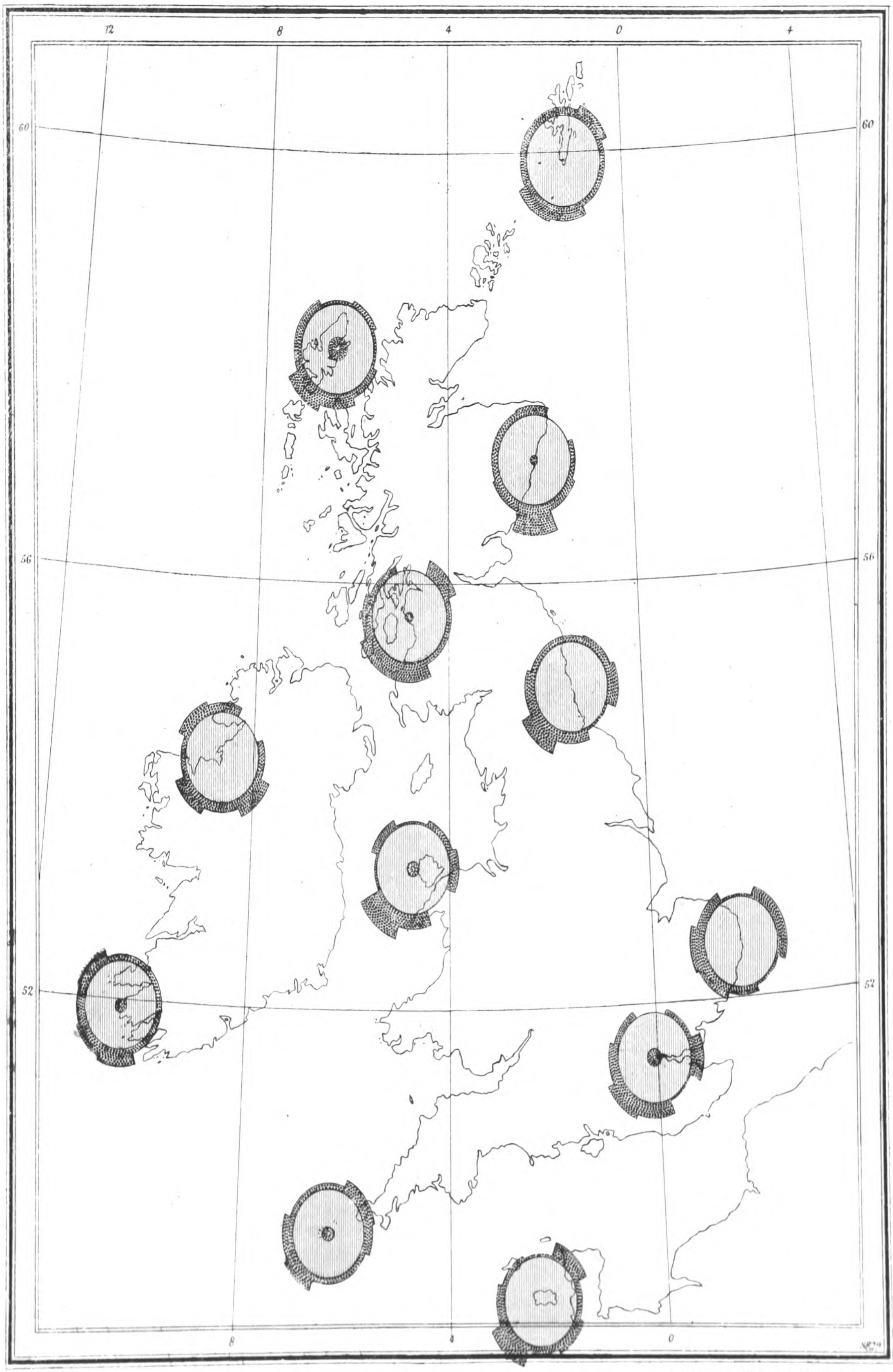
† At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

TABLE C., JUNE.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the month of JUNE 1877. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.								TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
				Means of			Absolute Extremes.																									
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
		ins.	°	°	°	°	°		°		in.	%		ins.	in.																	
0. SCOTLAND, N.	Sumburgh Head	29·845	49·7	42·7	53·9	48·3	34	7th, 9th	58	16th, 28th	0·297	84	7·2	2·73	0·35	1st	19	0	0	1	2	10	5	3	5	2	2	5	7	3	3	0
	Thurso	29·824	53·7	46·1	61·0	53·6	41	13th	73	16th	·314	76	6·5	4·06	0·93	21st	19	0	0	0	6	11	0	2	0	3	4	6	5	4	2	4
	Wick	28·839	52·7	45·3	58·9	52·1	40	23rd	66	15th	·325	82	6·2	3·16	1·19	21st	15	0	0	0	9	14	1	1	1	5	5	5	6	3	2	2
	Stornoway	29·798	53·6	45·7	58·7	52·2	38	12th, 26th	70	15th, 16th, 17th.	·353	86	5·7	5·20	0·74	21st	19	0	0	1	7	9	6	1	2	1	2	5	9	3	3	4
1. SCOTLAND, E.	Nairn	29·845	54·8	48·7	61·6	55·2	42	13th	73	15th	·304	71	6·0	3·06	0·68	22nd	16	0	0	0	8	12	0	0	0	1	1	4	7	4	1	12
	Aberdeen	29·869	54·2	47·5	60·7	54·1	40	13th	66	9th, 11th, 30th.	·322	77	4·7	3·67	0·77	28th	16	0	0	1	12	7	0	3	0	2	3	14	3	2	2	1
	Leith	29·890	56·2	49·1	65·3	57·2	42	8th	72	28th	·357	79	5·4	1·73	0·37	22nd	15	0	0	2	3	6	0	0	3	6	1	2	6	7	4	1
2. ENGLAND, N.E.	Shields	29·948	55·4	50·0	61·5	55·8	44	16th, 24th	74	3rd	·355	81	6·0	1·09	0·37	22nd	15	0	0	1	8	10	0	2	3	5	1	4	9	4	2	0
	Scarborough	29·969	57·4	50·7	63·3	57·0	46	14th, 17th, 24th.	75	3rd	·355	75	5·7	1·18	0·34	12th	13	0	0	1	9	10	1	4	5	0	4	2	8	5	2	0
	York	29·980	57·4	49·1	68·3	58·7	41	15th, 16th, 24th.	78	18th	·352	74	4·5	1·15	0·38	12th	12	0	0	1	11	7	2	3	2	4	1	6	7	5	2	0
3. ENGLAND, E.	Yarmouth	30·026	59·1	52·8	64·8	58·8	45	24th	81	29th	·401	80	2·9	1·82	0·97	30th	10	0	0	2	20	1	1	1	5	5	1	2	5	7	4	0
	Cambridge	30·020	60·5	48·9	72·9	60·9	42	24th	84	18th	·405	78	5·1	1·34	0·96	30th	12	0	0	0	10	10	0	3	5	1	1	5	9	3	3	0
4. MIDLAND COUNTIES.	Nottingham	30·011	60·4	49·5	72·8	61·2	38	24th	84	20th	·383	73	6·6	1·29	0·32	21st, 22nd	10	0	0	2	5	13	1	4	2	1	4	7	4	4	4	0
	Oxford	30·006	59·0	51·0	71·8	61·4	41	24th	83	18th	·391	78	7·7	0·98	0·33	21st	6	0	0	1	5	18	0	3	4	2	0	6	6	4	1	4
5. ENGLAND, S.	London	30·028	62·4	52·0	74·7	63·4	44	7th	85	18th	·376	67	4·5	0·55	0·36	11th	5	0	0	0	12	6	1	0	2	6	1	5	7	4	3	2
	Dover	30·037	61·5	55·4	66·5	61·0	47	7th	74	18th, 19th	·407	76	2·8	1·12	0·63	11th	9	0	0	2	19	2	1	1	4	6	0	3	9	3	4	0
	Hurst Castle	30·021	60·3	53·5	65·5	59·5	47	2nd, 25th	75	18th	·458	88	5·2	0·88	0·53	11th	7	0	0	1	12	12	1	0	0	9	2	1	4	7	2	5
6. SCOTLAND, W.	Ardrossan	29·894	55·7	51·7	63·3	57·5	46	23rd	81	18th	·353	79	6·0	4·05	0·62	6th	18	0	0	1	8	13	0	0	6	2	2	7	6	4	2	1
7. ENGLAND, N.W.	Liverpool	29·964	57·3	52·5	66·4	59·5	48	8th, 15th, 16th.	79	18th, 19th, 20th.	·338	72	6·5	1·13	0·22	6th	13	0	0	0	8	13	1	0	1	5	7	3	6	6	2	0
	Holyhead	29·944	56·5	53·1	64·0	58·6	48	7th	73	18th	·401	88	6·0	2·60	0·56	22nd	17	0	0	0	9	11	1	1	2	4	0	5	12	1	3	2
8. ENGLAND, S.W.	Pembroke	29·964	56·9	53·5	62·6	58·1	48	1st	76	18th	·398	86	5·3	1·45	0·46	1st	13	0	0	1	11	12	3	3	1	5	3	4	5	3	2	4
	Portishead	29·996	58·8	51·5	69·8	60·7	47	7th, 8th, 25th.	82	19th	·402	81	7·0	1·44	0·43	21st	12	0	0	0	7	16	3	2	4	4	1	3	7	7	2	0
	Plymouth	29·996	60·2	54·2	67·4	60·8	45	25th	75	17th	·415	80	5·7	0·86	0·25	21st	8	0	0	1	10	13	3	0	1	7	2	3	6	1	3	7
9. IRELAND, N.	Greencastle	29·856	56·3	49·3	64·8	57·1	40	24th	79	20th	·369	81	6·9	2·73	0·42	25th	17	0	0	1	8	19	0	3	0	4	2	9	4	7	1	0
	Donaghadee	29·906	56·3	50·1	62·7	56·4	43	4th, 24th	69	18th	·382	84	4·5	2·41	0·78	6th	15	0	0	1	12	6	4	6	3	2	1	6	5	5	2	0
10. IRELAND, S.	Kingstown	29·940	56·8	53·3	63·4	58·4	48	7th, 24th	71	20th, 28th	·362	78	5·8	1·18	0·41	22nd	13	0	0	1	5	8	1	2	3	5	3	6	2	6	3	0
	Valencia	29·935	57·9	51·4	62·9	57·2	44	27th	74	15th, 17th	·391	82	7·6	4·17	0·89	7th	21	0	0	0	1	16	7	2	2	2	2	6	5	4	5	2
	Roche's Point	29·975	57·2	51·9	65·3	58·6	46	8th	76	18th	·365	78	6·4	4·41	0·94	5th	14	0	0	0	5	11	4	5	1	3	3	3	7	4	3	1
CHANNEL	Scilly	29·995	57·8	54·0	61·6	57·8	50	1st, 2nd, 7th.	68	29th	·418	87	8·5	1·16	0·36	21st	17	0	0	1	1	20	5	2	5	4	2	2	6	5	2	2

MONTHLY WIND CHART FOR JUNE 1877.

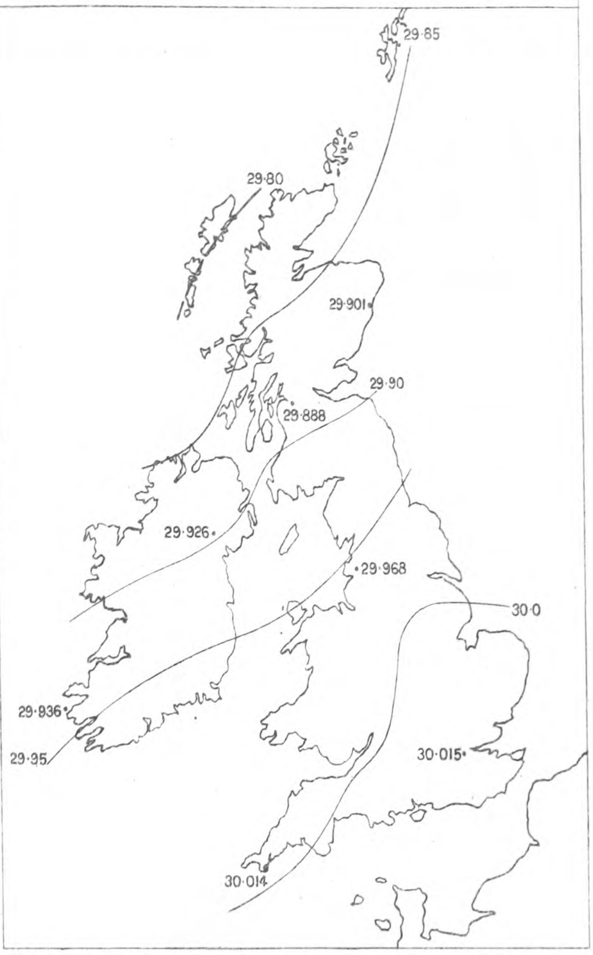

12
8
4
0
4
60
60
56
56
52
52
8
4
0

To face p. 80.

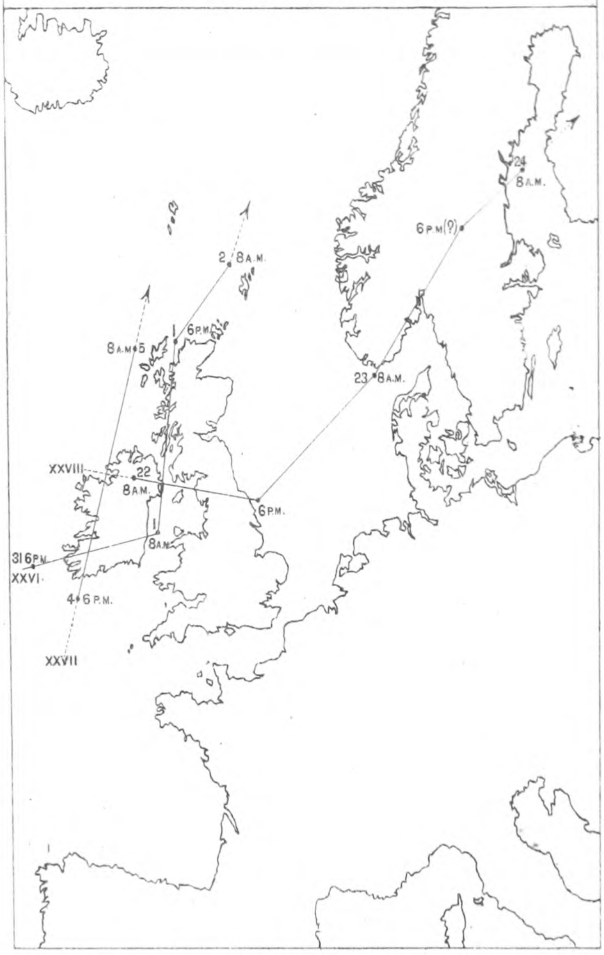
Dangerfield Lith 22 Bedford St Covent Garden

MONTHLY WEATHER CHART JUNE 1877.

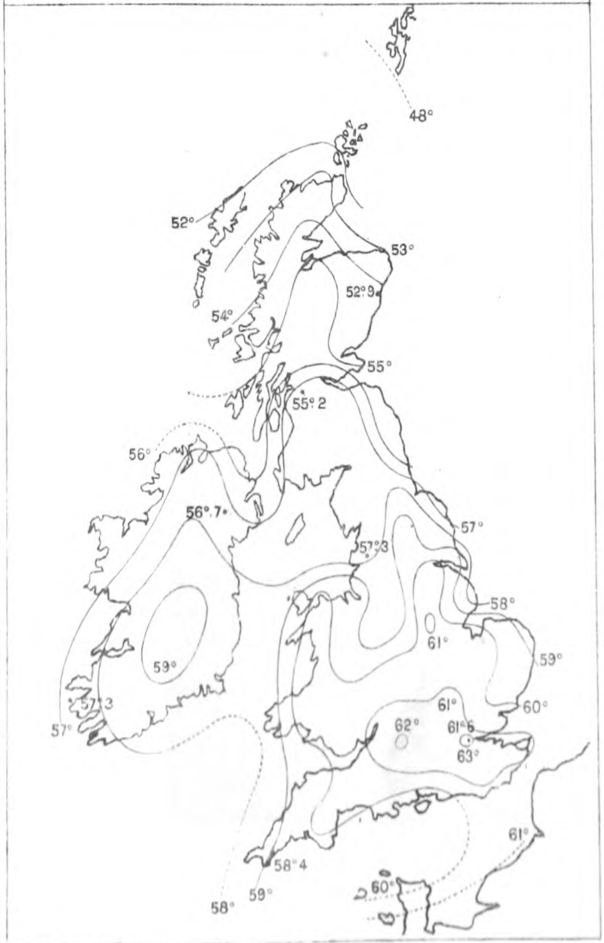
1. DISTRIBUTION OF MEAN PRESSURE


29·85
29·80
29·901
29·90
29·888
29·926
29·968
30·0
29·936
29·35
30·015
30·014

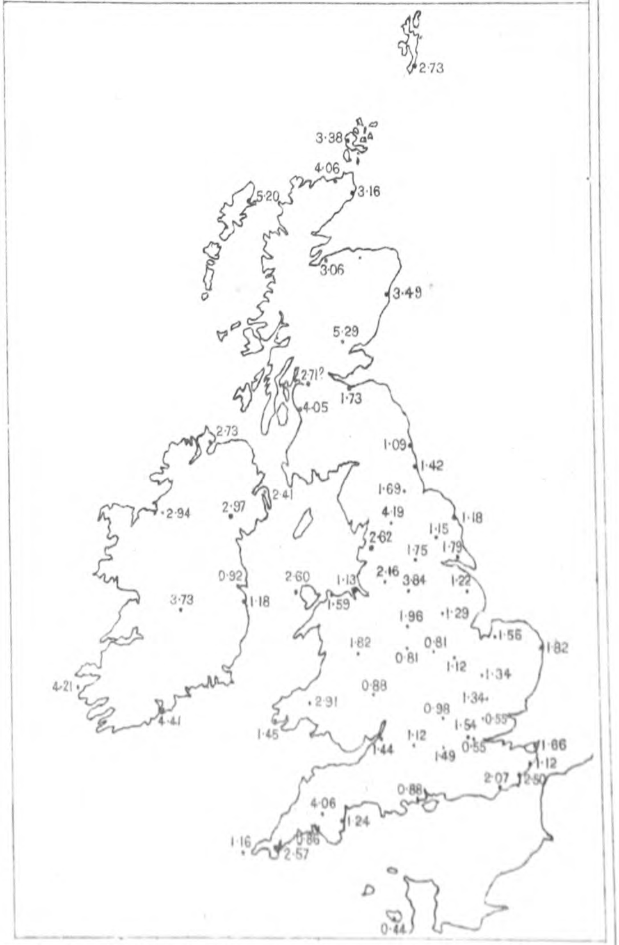
2. MOVEMENTS OF DEPRESSIONS.


24
8 A.M.
6 P.M. (?)
2 8 A.M.
1 6 P.M.
8 A.M. 5
23 8 A.M.
XXVIII
22
8 A.M.
6 P.M.
1
8 A.M.
31 6 P.M.
XXVI
4 6 P.M.
XXVII

3. DISTRIBUTION OF MEAN TEMPERATURE.


48°
52°
53°
52°.9
54°
55°
55°.2
56°
56°.7
57°
57°.3
58°
61°
59°
59°
57°.3
57°
61°
60°
62°
61°.6
63°
61°
58°.4
60°
59°
58°

4. RAINFALL


2·73
3·38
4·06
5·20
3·16
3·06
3·49
5·29
2·71?
1·73
4·05
2·73
1·09
1·42
1·69
2·41
2·94
2·97
4·19
1·18
1·15
2·62
1·75
1·79
0·92
2·60
1·13
2·16
3·84
1·22
3·73
1·18
1·59
1·96
1·29
1·56
1·82
1·82
0·81
0·81
1·12
1·34
4·21
0·88
2·91
1·34
4·41
0·98
1·54
0·55
1·45
1·12
1·44
1·49
0·55
1·66
1·12
2·07
2·50
0·88
4·06
1·24
1·16
0·86
2·57
0·44

8829

To follow Wind Chart for June.

DANGERFIELD LITH. 22. BEDFORD S^T. COVENT GARDEN

PART III.

SECTION I.

GENERAL SUMMARY FOR THE QUARTER.

THE most noteworthy feature connected with the weather of the three months now under review was the persistently low temperature which was maintained almost throughout, but which was especially noticeable in July and September. The period was not a very stormy one, although the weather was unsettled, but while the first two months were wet, the third was unusually dry. Pressure was below the average in July and August, but rather above it in September. The prevailing winds in July were Westerly, but in August Easterly winds predominated at the northern stations, and in September Northerly winds were very general.

July 1st–5th.—The distribution of barometrical pressure observed on the morning of the 1st was extremely simple. The highest readings lay over the Bay of Biscay and the lowest over the ocean to the northward of Great Britain, while a band of very uniform, and moderately high, readings stretched from Ireland across the whole of central Europe. With these conditions the winds over the greater portion of the British Isles were light or moderate from the Westward, but in the north of Scotland they were South-westerly, and on the western coast of France North-westerly and Northerly. Temperature was rather low for the time of year, and the weather generally dull and cloudy.

During the ensuing four days very little change took place in the general distribution of pressure, although the barometer fell slowly in all parts of the kingdom, and owing to the existence of several small local disturbances, unsettled cloudy weather with low temperatures continued to prevail. At the close of the 5th, a large but very shallow area of low pressure, which was accompanied by thunderstorms in nearly all parts of the kingdom, had become developed over Great Britain.

July 6th–11th.—The area of low pressure now travelled slowly north-eastwards, becoming somewhat deeper during its progress; on the morning of the 6th it lay over the North Sea and from thence it passed across Lapland, where it finally disappeared on the 9th. Simultaneously with its departure from our shores the barometer began to rise again, and a well-defined anticyclonic system soon became developed off our south-western coasts. These conditions were, however, quickly modified by the arrival of a shallow depression over the northern portion of the kingdom on the 9th, followed next day by a deeper one, which, travelling in a north-easterly direction, skirted our north-western coasts, and under the joint influence of the two systems pressure again gave way all over the country; in the south of England the decrease continued uninterruptedly, but at the northern stations this was checked at the close of the 10th and was followed by a slight rise during the ensuing twenty-four hours.

During the first part of the interval the wind veered very generally to North, then gradually backed again to West, and on the 10th to South-west, from which quarter it blew a gale in the Hebrides; on the 11th, however, West had again become the prevailing direction. The weather was unsettled throughout, but although cold at first, it became somewhat warmer towards its close.

July 12th–18th.—A large system of low pressure now approached from the westward, and under its influence the decrease of pressure became general over the whole of Western Europe, and the anticyclone disappeared entirely from our Channel coasts. A cyclonic area arrived near the north of Ireland on the morning of the 14th, and was soon afterwards joined by a shallow disturbance which reached the Channel later in the day. On the morning of the 15th the centre of the combined systems, which had become much deeper since their junction, lay near Liverpool, and the winds were generally strong from West over the southern portion of England, and from East over the northern counties and Scotland, while heavy rain had fallen very generally, and the weather had again become cold and unseasonable. The eastward progress of the depression was stopped by the relatively high pressure which prevailed on the Continent at this time, and therefore, till the close of the 16th, it remained almost stationary, becoming meanwhile partially filled up; readings then gave way over Scandinavia, and the centre of the system passed in an east-north-easterly direction across northern England, and reached the neighbourhood of Stockholm on the 18th. In most parts of the kingdom the barometer rose continuously during the last three days of the period, but at Valencia it ceased to do so at midnight of the 17th, and at Falmouth a few hours later; in both cases a slight fall occurred, accompanied at first by a *backing*, and then by a *veering* of the wind, which was probably due to the passage of a small local depression (see Plate XL.). On the 18th an area of high pressure had become developed over the Peninsula and the Bay of Biscay, and the wind had again become generally Westerly, drawing into North in Scotland; temperature was still low, and the weather cloudy and dull.

July 19th–26th.—Cyclonic conditions continued to prevail over Great Britain during nearly the whole of this interval. On the 19th a shallow depression passed across the north of Scotland and caused pressure to give way at all our northern stations; but this movement was quickly succeeded, first, by a general rise of the barometer, and then by another fall, which began in the west at the close of the 20th and quickly extended itself over the British Isles, and also to western France, where for some time pressure had been relatively high. This decrease of pressure continued until the close of the 23rd, and was apparently due to the passage of a depression in a northerly or north-north-easterly direction outside our western coasts; during the latter part of the 23rd the centre of the disturbance probably lay not far from the Hebrides.

On the 24th the barometer rose again very generally, and the wind, which had for some time been Southerly, veered to South-west, and on the French coast to North-west. A new area of high readings was then becoming developed over the Peninsula and the south-west of France, and gradients for Westerly winds gradually became established over the British Isles. The rise of the barometer was, however, temporarily checked during the night of the 25th by the arrival of a well-marked subsidiary disturbance which travelled across the southern portion of the country and reached the neighbourhood of Yarmouth at 8 a.m. on the 26th. Rain fell very generally in its path, but by the close of the day the system had quite disappeared and the wind had become generally Westerly, while the weather had impoved.

July 27th–31st.—The distribution of pressure had now become very similar to that with which the month opened, a large area of high readings existing over the Bay of Biscay concurrently with a band of low pressure to the northward of Scotland and over Scandinavia; moderate or light Westerly winds were general, with dull cloudy weather. The barometer continued to rise until the close of the 29th, when the centre of the anticyclone lay near the entrance to the Channel; on that day also a very general increase of temperature occurred, and for a day or two maxima exceeding 80° were recorded over the south-eastern and midland counties of England. On the 30th, however, the mercury began to fall again, and the anticyclone gradually decreased in height and moved eastwards across northern France to central Europe. The fall continued till the close of the 31st, when a very shallow depression passed across England, in the rear of which the wind shifted to the Northward, and temperature fell very briskly.

August 1st–5th.—Throughout the greater part of this interval the movements of the barometer over the British Isles were slight and somewhat irregular. The anticyclone had become dispersed over central Europe, and a new area of high pressure was showing itself to the south-west of our Islands, while over the Gulf of Bothnia readings were low and the barometer was still falling. With these conditions Northerly winds had become general over the kingdom, with very low temperature and cloudy weather. A small secondary depression appeared over southern Scandinavia on the 3rd, and caused an increase of wind in that region, but its only effect upon the weather on the western shores of the German Ocean was to cause the wind, which had then backed to West, to veer again to North, bringing some rain to our eastern and northern coasts. On the 4th, however, another steady decrease of pressure commenced at Valencia, and preceded a very considerable change in the distribution of pressure over western Europe, which was effected by the close of the following day. The barometer was then falling generally in our Islands, the high pressures had quite disappeared from the mouth of the Channel, and an area of low readings was apparently approaching us from the Atlantic, while in the Baltic the mercury, although it was still low, was rising fast. With these conditions the wind had become generally Southerly, and in the extreme west had freshened somewhat, but temperature had risen and the weather had considerably improved.

August 6th–11th.—The barometer continued to fall uninterruptedly until the night of the 7th, when the centre of a large and moderately deep depression (No. XXXII.) reached the south of Ireland. In the meantime, however, the increase of pressure over the north of Europe had continued, and had resulted in the development of an anticyclone in the neighbourhood of the Gulf of Bothnia, which, together with the relatively high pressure over central Europe, served to greatly check the further eastward progress of the depression. At the close of the 8th, therefore, its centre still lay in St. George's Channel, and, with the barometer rising briskly in the south-west, it was becoming partially filled up. The chart for the following morning shows that it had then reached the north-east coast of England, from whence, taking a more northerly course, it travelled over Scotland and passed clear of our Islands on the morning of the 10th, at which time the barometer was rising all over the kingdom. The wind, which for a time blew freshly in the south and west, veered to West and North-west as the system passed away, but the change was not followed by any material improvement in the weather, which continued cloudy and very cold for the time of year. A small subsidiary depression passed across northern France on the 10th, and lay over the Netherlands on the morning of the 11th; but a new area of high pressure was then beginning to show itself at the mouth of the Channel, while at the same time the anticyclone over the Gulf of Bothnia not only maintained itself, but increased in height, and a belt of relatively low readings, therefore, stretched from north-west to south-east across the North Sea and central Europe, between the two ridges of high pressure. These conditions were accompanied by light North-westerly winds over Great Britain and South-easterly airs and calms on the eastern shore of the North Sea.

August 12th–19th.—During this period the changes in pressure were somewhat irregular, and its general distribution over western Europe again underwent a complete change. The high readings observed at the entrance to the Channel on the 11th had quite disappeared by the close of the 12th, and a shallow depression was then observed over the southern portion of the Bay of Biscay, moving slowly northwards towards the mouth of the Channel, where it was shown at 8 a.m. on the 14th. At that time, however, the barometer was falling briskly in the north of Europe, and the anticyclone which had been located there was moving in a south-easterly direction across central Russia. The depression, therefore, continued to follow its northerly course, but at the same time extended itself considerably to the eastward, and formed a junction with the shallow depression noticed over the Netherlands on the 11th, and which had since continued in that region. In this way a broad band of relatively low readings became developed, which extended from the south of Ireland to Finland, and contained two independent shallow depression centres, one over Ireland and the other over the south of Norway; the latter of these, becoming deeper, travelled in an east-north-easterly direction to Finland, where it disappeared on the 19th. The chart for the morning of the 18th shows that a band of relatively high pressure then stretched from Belgium to the north of Scotland, but having on its western side a shallow depression whose approach caused a very general fall of the barometer over Great Britain during the day, and although towards the close of the 19th pressure recovered again slightly, yet a band of low pressure became established once more over the kingdom. During the first few days of the period the wind over Great Britain was Northerly and Easterly; on the 15th, however, a Southerly current appeared in the south-west, and gradually spread northwards, although in the north of Scotland it continued to blow from between North and East throughout the whole time. With the advent of the Southerly wind the temperature rose, but the weather continued unsettled. Heavy rain fell in Ireland on the 15th, on which day thunderstorms were very general.

August 20th–23rd.—In addition to a small subsidiary disturbance which lay over the Irish Sea on the 20th, a new cyclonic system now approached our south-western coasts, and caused the barometer to fall again very generally. The centre of the depression reached the mouth of the Channel very early on the morning of the 21st, and judging from the movement of the barometer and the changes of wind at Falmouth, shown on Plate XLVII., passed a little to the westward of that station. The system was moving rapidly, and at 8 a.m. it lay over northern England and the southern counties of Scotland; on the following morning it was shown over the south-western portion of Norway, and from thence it passed away over the Gulf of Bothnia. In England the depression was accompanied by fresh or strong South-westerly winds, but in Scotland and Ireland North-easterly winds, backing to North and North-west, prevailed. Heavy rain fell in all parts of the kingdom, and temperature again decreased after having risen somewhat in the south-eastern and midland districts of England on the 20th; on the 23rd the wind had become generally North-westerly, and the weather had improved. The barometer began to rise very generally on the 21st, and, with the exception of a slight check caused by the advance of a small subsidiary depression across Wales and Central England during the ensuing night, it continued to do so until the close of the 23rd, by which time a fresh area of relatively high pressure had become developed off our south-western coasts.

August 24th–31st.—The changes in atmospheric pressure now became frequent, and the weather very unsettled. On the 24th the area of high readings moved eastward from the Channel to Germany, and the wind over the British Isles became light with rather finer, although cold, weather. At mid-day a fresh fall of the barometer began in the south-west and quickly extended to the remainder of the kingdom, while simultaneously the wind in the south-western districts shifted to the Eastward and increased in force, rising on the 25th to an Easterly gale at the mouth of the Channel. The barometer continued to fall till the evening of the 25th, when the centre of a moderately deep depression (No. XXXV.) reached the neighbourhood of Scilly, and continuing to travel in an easterly direction, passed across southern England during the night and lay between Norfolk and Holland at 8 a.m. on the 26th. The passage of the depression was accompanied by a *backing* of the wind over Ireland and the northern half of England, while on the Channel coasts it *veered*; temperature rose slightly, and rain was both general and heavy.

After leaving our coasts the depression took a more northerly course towards the Baltic, reaching the neighbourhood of Stockholm by the morning of the 27th, and finally disappearing over Finland. A rapid rise of the barometer took place over southern England, and also, but to a less extent, over the northern portion of the kingdom on the 26th, but it was only of brief duration, and was quickly followed by a slight fall, due to the passage across the country during the night of the 26th, of a small subsidiary depression, following much the same track as the larger one which had preceded it. This was, however, succeeded by a more serious fall, which especially affected the northern stations, and was caused by the approach of depression No. XXXVI., which passed over central Scotland on the morning of the 28th, and afterwards became dispersed over Scandinavia. Once more a general increase of pressure set in, accompanied by fresh South-westerly winds over England, and light Southerly winds in the north of Scotland, but on the 29th another decrease was brought about by a small disturbance travelling towards the Norwegian coast at some distance to the northward of Scotland, while at the same time a small subsidiary was noticed further south. At the close of the 31st, however, the barometer was again rising all over the kingdom, with a moderate Northerly wind, and although showers of rain fell in many places, the weather was, upon the whole, finer, but cold for the time of year.

September 1st–3rd.—On the morning of the 1st an area of high pressure was again found over the Bay of Biscay, while the depression just referred to lay over the north-west coast of Norway; light Westerly winds were general over Great Britain, except in the extreme north, where the direction was more Northerly, but Easterly breezes prevailed in the south of France, and the weather continued fine, though cold. In most parts of the kingdom very little change took place in pressure during the first two days of the month, but in the south-west it gave way on the 2nd, and during the night another small but well-defined depression passed across southern England; it was accompanied by very heavy rain and squally cold weather in all parts of England and Wales and over northern France. At 8 a.m. on the 3rd the centre of the system lay over the eastern portion of the Channel, and fresh Northerly winds were then blowing on all the western coasts and in Scotland, and Easterly winds on the east coast of England. During the day the disturbance passed on to the Netherlands, and the Northerly wind then became general, while the barometer rose again in all parts of the kingdom.

September 4th–9th.—By the morning of the 4th the depression had disappeared, and a large area of high pressure had become developed over our south-western coasts and the ocean beyond, while the barometer was still rising generally, with light Northerly winds. On the 5th, however, a fresh decrease of pressure was caused by a large depression to the northward of Scotland, and the wind backed generally to the Westward. At the southern stations the fall continued till the 7th, but in the north it ceased on the 6th. It resulted in the complete dispersion of the high pressure area in the south, which was succeeded over southern France by a shallow depression, while a new area of relatively high readings began to show itself near the Hebrides, and Easterly winds became general. The existence of this new patch of high pressure was very brief, and after moving south-eastwards a little it gave way before a fresh general fall of the barometer which set in on the 9th, at the close of which day an area of low pressure lay to the west of Ireland, while the wind veered to South-east in the south and west. The weather during the last day or two of this period improved somewhat, and temperature, although still low, slightly increased.

September 10th–15th.—Pressure was now very uniform and comparatively high over the western portion of the Continent and the North Sea, but it was decreasing again in most parts of the British Isles, and in the west the South-easterly wind had increased somewhat in strength. In the south of England the decrease of pressure was not great, and it ceased altogether on the 11th, but at the northern stations it continued till the close of the 12th, when the mercury fell to 29·2 inches. This fall was occasioned by the passage in a northerly direction along our western coasts of a disturbance whose centre lay to the westward of the Hebrides. In the meantime the high pressure area had been extending itself south-westwards over France, and as the barometer had been rising in the south of England since the evening of the 11th, gradients over Ireland and England had become rather steep for South-westerly winds, while Southerly winds blew in Scotland, and Westerly winds in France, and rain fell very generally. During the night of the 12th pressure increased somewhat at most stations, but on the 13th a fresh decrease began in the south-west of Ireland, and soon afterwards extended to the northern portions of the kingdom, while in the south of England the barometer remained steady. This movement preceded the approach of a new disturbance which passed to the northward of Scotland early on the 14th, and caused fresh or strong Westerly winds with squally and unsettled, although rather warmer, weather to prevail. After the depression had passed away the barometer rose generally, and in the north very rapidly, the rise continuing throughout the 15th. At the southern stations, however, a fresh and brisk fall occurred during the night of the 14th when a small but well-defined secondary system reached the entrance to Saint George's Channel, and travelled across England to the north

Yorkshire coast, its path lying to the southward of Holyhead. Its passage was accompanied by rain, which was especially heavy in the south-west of Ireland, Saint George's Channel, and the north of England, and also by severe thunderstorms in the south of Ireland, the effect of which upon the barometer at Valencia is well shown on Plate LIII. At the close of the 15th the barometer was rising in all parts of the kingdom, and the highest readings were found to the westward of the British Isles, and the lowest over southern Scandinavia; the wind was Northerly and had fallen light, and the weather was generally finer, although the temperature was still low.

September 16th–23rd.—The general distribution of pressure remained unchanged throughout this interval, the barometer continuing highest to the westward of the British Isles, and lowest over Scandinavia and the Baltic. The mercury rose over Great Britain during the 16th and 17th, but fell again during the next three days, the high pressure giving way under the influence of a depression which had appeared over the Gulf of Bothnia, and which, moving southward very slowly, remained over the Baltic till the 21st, when it passed over Russia. A slight recovery of pressure then took place, but until the close of the 23rd the movements of the barometer were only slight and somewhat irregular; on the morning of that day a small subsidiary system was observed over Denmark, but as pressure was then uniformly low over all that portion of Europe, the winds were everywhere light. Over the British Isles Northerly winds prevailed during the whole of the period, and the weather was generally fair, but cold, the temperature over the south-eastern portion of England being especially low.

September 24th–30th.—A change in the distribution of pressure now began to take place, and during the remainder of the month anticyclonic conditions prevailed over the United Kingdom. The barometer rose very generally, and with the exception of a slight decrease at the northern stations on the 25th, continued to do so till the 27th, after which time the movements of the mercury were somewhat irregular, but very slight. The high pressure, which on the 24th lay to the westward of Ireland, advanced in an easterly direction, and on the 27th a belt of high readings stretched from the British Isles across central Europe, the barometer being lowest over Lapland, while a second low-pressure area lay over the Peninsula. On the 29th a deep depression reached the Gulf of Bothnia and caused steep gradients and strong North-westerly winds to prevail over Scandinavia, but by the following day the disturbance had nearly disappeared, and the anticyclone had extended itself over the greater portion of Europe. In the British Isles the wind was light throughout the interval, its direction being at first Northerly, then variable, and on the 30th Easterly. The weather was generally quiet and fine, and temperature nearly normal; in this latter respect, however, central England was an exception, and on the morning of the 27th the thermometer was 13 degrees lower at Oxford than it was at Aberdeen.

SECTION II.

TABLE OF CYCLONIC SYSTEMS.—JULY, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XXIX. July 6-9.	No. XXX. July 14-19.
Form	Elliptical	At first irregular, then oval, and then nearly circular.
Size	Very large	Very large.
Depth	Shallow	At first very shallow, but afterwards moderate.
Where first Observed	Over Great Britain	To the westward of Ireland.
Direction of Motion	North-easterly	Northerly, and then east-north-easterly.
Rate of Motion	Slow	Slow, remaining stationary for about 36 hours.
Regions passed over by Steepest Gradients	Scandinavia	United Kingdom.
Termination	Disappeared over Lapland	Travelled away to Russia.
Time under Observation	Three days	Five days.
Accompanying Winds	Northerly and North-westerly	At first circulated around the depression, but afterwards became generally Westerly. Fresh to strong.
„ **Weather**	Generally dull and showery with low temperature	Dull, wet and unseasonable.
„ **Rainfall**	General, but not heavy; thunderstorm on the east coast.	Very general and heavy, especially on the 14th and 15th.
REMARKS	This system apparently became developed over Great Britain, but first assumed a definite shape while lying over the North Sea. It increased in depth during its progress northward.	This system was formed by the junction over St. George's Channel of two distinct areas, one of which came in from the north-west and the other from the south-west. The relatively high pressure on the Continent barred for a time its eastward progress, but pressure giving way over north-western Europe allowed the centre to travel away to the Baltic.

TABLE OF CYCLONIC SYSTEMS—JULY-AUGUST, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XXXI. July 21-25.	No. XXXII. August 6-10.	No. XXXIII. August 16-19.
Form	Apparently elongated	At first nearly circular, then oval	Nearly circular at first, afterwards elliptical.
Size	Large	Very large	Moderate
Depth	Uncertain	Moderate	Shallow
Where first Observed	Off the west of Ireland	South-west of Ireland	South of Norway
Direction of Motion	Northerly or north-north-easterly	At first easterly, then north-easterly and afterwards northerly.	East-north-easterly
Rate of Motion	Very slow	Slow	Very slow
Regions passed over by Steepest Gradients.	South-west of England and north-west of France.	South Ireland and south-west of England.	Denmark
Termination	Disappeared to the northward of our Islands.	Disappeared to the northward of Scotland.	Disappeared over Finland
Time under Observation	Four days	Three days and a half	Three days
Accompanying Winds	Moderate to fresh, Southerly, veering to South-westerly, winds.	Generally Southerly, veering to West and North-west.	South-westerly in Denmark and the Baltic, North-easterly in Sweden and Norway, afterwards becoming North-westerly.
" Weather	Overcast, squally and wet, but, except in the extreme west, improving on the 24th.	Cloudy and wet, with a general fall of temperature.	Overcast and rather wet in Great Britain, with thunderstorms in the north-east and east.
" Rainfall	Very general, but heaviest in the south and west.	Rain fell all over the kingdom, but most heavily in the west.	Slight in Scandinavia, but general in the British Isles.
REMARKS	The centre of this depression kept to the westward of our Islands, and therefore no precise details as to its shape and depth can be given; its arrival was preceded by a shallow depression which travelled across northern Scotland on the 19th.	The eastward progress of this system was much interfered with by a development of pressure over Scandinavia. After remaining for a while nearly stationary in Saint George's Channel, it moved to the north-east coast of England, and then changed its course to the northward, and disappeared over the ocean to the northward of Scotland.	This system was a development of an area of low pressure which had existed for some time in the neighbourhood of the Netherlands, but which expanded considerably upon the arrival of another shallow depression from the southward.

TABLE OF CYCLONIC SYSTEMS—AUGUST-SEPTEMBER, 1877.

No. XXXIV. **August 21-24.**	No. XXXV. **August 25-27.**	No. XXXVI. **August 27-29.**	No. XXXVII. **September 2-3.**
Elongated and irregular	Oval	Oval	Nearly circular
Large	Large	Large	Moderate.
Moderate	Moderate	Moderate	Shallow.
South-west of England	At the entrance to the English Channel.	To the westward of Ireland	To the south-west of England.
North-easterly	North-easterly	North-easterly	Easterly.
At first rapid, then slow	Moderate	Moderate	Slow.
England, Scotland, and Denmark	The north-west of France and south of England.	England	England and the north of France.
Passed away to Northern Russia	Disappeared over Finland	Dispersed over Scandinavia	Filled up on the Continent.
Three days	Two days	Two days	One day.
Fresh to strong South-west winds in England, and North-easterly winds in Scotland and Ireland, becoming generally North-westerly.	At first Easterly, backing in north England and Ireland to North-east and North, and veering in the south to South-west and West.	Southerly and South-westerly, becoming Westerly in the south and North-easterly and Northerly in the north.	Fresh to strong winds from South-east in the east, North-west in the west, and North-east in the north.
Very cloudy and wet, with thunderstorms in several places.	Generally dull, wet, and unsettled	Very unsettled and wet	Very wet, squally, and cold.
Heavy and very general; the largest amounts fell in the north, and at Ardrossan nearly 2 inches were measured.	General and in many places very heavy, especially on the south coast.	Very general and heavy, totals of more than an inch were reported from several stations.	Heavy and general, exceeding an inch at some stations.
Just previous to the arrival of this depression, a band of low pressure had become established over Great Britain; the track of the centre lay apparently not far to the westward of Falmouth.	The centre of this system travelled across southern England during the night of the 25th, and then shifted its course to the northward towards the Baltic. It was followed almost immediately by a small secondary which pursued a very similar track.	The path of this depression lay considerably to the north of that of its predecessor; it was, however, succeeded by another disturbance which passed still further to the northward, and which, together with a small subsidiary over Great Britain, caused a continuance of the unsettled weather.	Although shallow, this was a well-defined depression which passed along the Channel coasts to the Continent and produced very wet, cold, and squally weather over the greater portion of the kingdom.

TABLE OF CYCLONIC SYSTEMS—SEPTEMBER, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XXXVIII. September 10-12.	No. XXXIX. September 13-14.
Form	Uncertain, but probably elliptical	Probably oval.
Size	Large	Large.
Depth	Moderate	Moderate.
Where first Observed	To the south-west of Ireland	To the south-west of Ireland.
Direction of Motion	Northerly	North-easterly.
Rate of Motion	Slow	Slow.
Regions passed over by steepest Gradients	The United Kingdom	The British Isles and North Sea.
Termination	Disappeared to the northward of the British Isles	Disappeared over northern Scandinavia.
Time under Observation	Two and a half days	One day.
Accompanying Winds	South-easterly, veering to South-west and West	Fresh or strong from South-west veering to West.
" Weather	Very wet and dull in the west, but moderately clear in the east.	Rough, wet, and squally.
" Rainfall	Heavy at the western stations, slight over the eastern counties.	General, but heaviest in the west and north.
REMARKS	This system skirted our western shores, but its centre kept too far to the westward to allow its size and shape to be definitely ascertained. At the close of the 12th it was probably not very far from the Hebrides.	Only a portion of this depression came over the British Isles, and its shape is therefore uncertain. It was followed by a well-marked secondary which passed across England during the night of the 14th.

TABLE OF GALES.

No. 19. (CYCLONIC SYSTEM, No. 38.)

Stations.	VELOCITY 30-40 Miles per Hour.		VELOCITY Exceeding 40 Miles per Hour.				VELOCITY Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	MAXIMUM VELOCITY.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Sept. 11-12, 1877.													
Sandwick.	8 a.m. (11th).	S.E. by S.	—	—	—	—	10 a.m. (11th).	S.E. by S.	2	9 a.m. (11th).	S.S.E.	35	—
	1 p.m. (11th).	S.E. by S.	—	—	—	—	4 p.m. (11th).	S.E. by E.	3	3 p.m. (11th).	S.E.	35	Wind again rose to 30 miles at 5 p.m, and 8 p.m., 11th.
Alnwick Castle.	10 p.m. (12th).	S.W.	Midt. (12th).	W.S.W.	41	1	4 a.m. (13th).	W.	6	Midt. (12th).	W.S.W.	41	30 miles were also recorded at 1 p.m. and 4 p.m., 12th.
Holyhead.	4 p.m. (11th).	S.S.E.	—	—	—	—	10 p.m. (11th).	S.S.W.	6	7 p.m. (11th).	S.	38	Instrument was not in proper action between 11 a.m. and 3 p.m., 11th, but the velocity was about 30 miles per hour during the interval.
	2 a.m. (12th).	S.S.W.	9 a.m. (12th).	S. by W.	47	3	4 p.m. (12th).	S.W. by S.	14	10 a.m. (12th).	S. by W.	51	
Valencia.	9 p.m. (11th).	W.S.W.	—	—	—	—	Midt. (11th).	W.S.W.	3	10 p.m. (11th).	W.S.W.	32	—
	1 a.m. (12th).	S.W. by W.	3 a.m. (12th).	S.W. by S.	42	2	6 a.m. (12th).	S.W. by W.	5	4 a.m. (12th).	S.S.W.	44	—
	9 a.m. (12th).	W.S.W.	—	—	—	—	6 p.m. (12th).	W.S.W.	9	11 a.m. (12th).	W.S.W.	39	—
Falmouth.	1 p.m. (11th).	S.W. by S.	—	—	—	—	5 p.m. (11th).	S.S.W.	4	2 p.m. (11th).	S.S.W.	33	—
	Noon (12th).	S.W.	—	—	—	—	5 p.m. (12th).	S.W. by S.	5	1 p.m. (12th).	S.W. by S.	36	—

No. 20. (CYCLONIC SYSTEM, No. 39.)

Sept. 13-14, 1877.													
Sandwick	3 p.m. (14th).	W.	—	—	—	—	9 p.m. (14th).	W.N.W.	6	3 p.m. & 7 p.m. (14th).	W. W.N.W	35	—
Glasgow	—	—	7 a.m. (14th).	S.W.	40	1	2 p.m. (14th).	S.W.	7	7 a.m. (14th).	S.W.	40	—
Alnwick Castle.	3 a.m. (14th).	S.W.	—	—	—	—	8 a.m. (14th).	W. by N.	5	7 a.m. (14th).	S.W. by W.	38	—
	—	—	9 a.m. (14th).	W. by N.	40	1	4 p.m. (14th).	W.	7	2 p.m. (14th).	W. by N.	43	—
			2 p.m. (14th).	W. by N.	43	1							
Stonyhurst.	5 a.m. (14th).	S.W. by S.	—	—	—	—	7 a.m. (14th).	S.W.	2	6 a.m. (14th).	S.W.	34	—
	8 a.m. (14th).	S.W.	—	—	—	—	10 a.m. (14th).	S.W. by W.	2	8 a.m. (14th).	S.W.	35	—
Holyhead	8 a.m. (13th).	S. by W.	10 a.m. (13th).	S.	44	16	5 a.m. (14th).	S.W. by W.	21	10 p.m. Midt. (13th).	S. by W. S.W. by S.	49	—
			3 a.m. (14th).	S.W. by S.	41	1							
Valencia	—	—	2 a.m. (13th).	S. by W.	48	21	1 a.m. (14th).	W.	23	5 p.m. (13th).	S. by W.	63	—
Falmouth	9 a.m. (13th).	S.W. by S.	—	—	—	—	3 a.m. (14th).	S.W.	18	6 p.m. (13th).	S.S.W.	37	At 11 a.m. and Noon, 14th, the velocities were 32 and 34 miles respectively.

TABLE OF ANTICYCLONIC SYSTEMS—JULY, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XIII. July 6-11.	No. XIV. July 25-31.
Form	Elliptical	Apparently oval
Size	Large	Large
Height	Small; max. readings 30·5 ins. on 9th	Small; max. reading 30·4 ins. on 26th
Where first Observed	To the south-west of the British Isles	Over the Peninsula and south-west France
Direction of Motion	Easterly	North-easterly
Rate of Motion	Very slow	Very slow
Regions passed over	The British Isles and France	France and the United Kingdom
Termination	Became dispersed	Became dispersed over central Europe
Accompanying Wind	Westerly or North-westerly in United Kingdom; Northerly to Easterly in France.	South-westerly, veering to West and North-west
„ Weather	Generally fine and dry	Rather dull, cloudy, and foggy, with bright intervals.
REMARKS	This system became developed over our south-western coasts as soon as depression No. XXIX. had left our eastern shores. Its centre kept throughout to the southward of England, and eventually it became dispersed under the influence of some depressions which arrived upon our northern coasts.	After this system had travelled from the Peninsula to near the entrance to the Channel, it passed across France and became dispersed. In this case also the highest readings remained to the southward of the British Isles.

TABLE OF ANTICYCLONIC SYSTEMS—AUGUST—SEPTEMBER, 1877.

No. XV. August 1-5.	No. XVI. August 7-14.	No. XVII. September 3-5.
Irregular	Doubtful, but probably oval	Irregular, but somewhat oval.
Large	Large	Large.
Small; max. readings 30·28 ins. on 3rd	Small; max. readings 30·49 ins. on 13th	Small; max readings 30·4 ins. on 4th and 5th.
To the south-west of the United Kingdom	Over Sweden	To the south-west of our Islands.
At first almost stationary, then easterly	At first stationary, then south-easterly	Easterly.
Very slow	Very slow	Very slow.
Great Britain and France	Scandinavia	France and Great Britain.
Travelled over central Europe	Disappeared over central Europe	Became dispersed.
North-westerly in Great Britain, Northerly to North-easterly in France.	South-easterly and South-westerly in Scandinavia. The wind over Great Britain was for the most part governed by the depression existing in the neighbourhood.	Northerly and North-westerly, backing to West over Great Britain, and veering to East in France.
Moderately fine, but rather cloudy. Lightning occurred in the eastern counties.	At first showery, afterwards moderately fine and dry, but cold throughout.	Clear, fine, and dry, but cold.
This system followed closely upon its predecessor, and like it became dispersed over the Continent. It gave way upon the approach of depression No. XXXII.	A depression lay over the British Isles, throughout the earlier part of the period during which this anticyclone existed. Towards the end of the time a new area of high pressure became developed over the Peninsula, but both it and the main system gave way before the approach from the southward of a new area of low pressure.	This system was very short-lived. It followed close upon the passage along the Channel of depression No. XXXVII., and gave way again upon the arrival near the north of our Islands of a new area of low pressure on the 5th.

TABLE OF ANTICYCLONIC SYSTEMS—SEPTEMBER, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XVIII. September 7-11.	No. XIX. September 15-19.	No. XX. September 24-30.
Form	Irregular and variable	Uncertain, but probably circular	Variable, but generally oval.
Size	Small	Large	Large.
Height	Small; max. readings 30·28 ins. on 9th	Moderate; max. readings 30·5 ins. on 17th.	Small; max. readings 30·4 ins. on 27th.
Where first observed	To the westward of the Hebrides	To the southward of the British Isles	To the westward of Ireland.
Direction of Motion	At first south-easterly, then northerly, and again south-easterly.	Northerly and easterly	Easterly.
Rate of Motion	Slow	Very slow	Very slow.
Regions passed over	Great Britain, the North Sea, and Scandinavia.	Great Britain, France, and the North Sea.	Western Europe.
Termination	Passed to central Europe, and gradually dispersed.	Disappeared to the westward of Ireland.	Did not become dispersed till later on in October.
Accompanying Wind	North-westerly in the north, Northerly in the east, and Easterly in the south; becoming variable and calm in the north, and Easterly or South-easterly elsewhere.	North-westerly over Scotland, Northerly elsewhere; generally light to moderate.	At first Northerly, then variable, and then Easterly; generally light.
„ **Weather**	Fine and dry	Fine and dry and cold; sky clear in the west, but rather cloudy elsewhere.	Moderately fine and dry, with local fogs or mist.
REMARKS	This system was also of brief duration. It moved slowly across the British Isles, and upon the arrival of a large area of low pressure upon the western coasts of Great Britain it became dispersed over the Continent.	For some days before the 15th pressure had been high over south-western Europe, but on that day the system moved northward and spread over the British Isles. On the 19th it moved to the westward, apparently under the influence of an area of low pressure then lying over the Baltic.	This appears to have been a reappearance of the previous system of high pressure. It advanced from the westward and passed across the British Isles to the Continent, where it remained till the 6th of October; it then returned to our western coasts and passed southward to south-western Europe.

NOTES to accompany the ANTICYCLONIC TABLES.

July 12th–24th.—During this interval the barometer was, as a rule, highest over southern Europe; an area of high readings was observed temporarily over northern Russia on the 14th, but it soon became dispersed, and was followed by another area of relatively high pressure over the Peninsula, from whence it extended itself again over southern and central Europe.

August 15th–September 2nd.—Pressure, although nowhere very high during this interval, was for the first few days highest over central and southern Europe. On the 23rd a new band of relatively high readings appeared over the Bay of Biscay and travelled to north-eastern Europe, being followed a few days later by another band over the Peninsula.

REMARKS FOR JULY, 1877.

(*Tables A. to C., July, with Monthly Wind and Weather Charts.*)

Wind.—At the commencement of the month the wind was influenced partly by the high pressure to the south-west of the British Isles, and partly by the low pressure to the northward, and consequently the light to moderate Westerly current which prevailed over the greater part of the kingdom, drew into North-west and North on the southern coasts, and into South-west in the north of Scotland. Very little change took place either in force or direction till the close of the 5th, when the wind became very light and variable on all except the Channel coasts, where the Westerly current still continued; by the following morning, however, the direction had veered somewhat, and by the close of the 6th a light to moderate Northerly wind had become general over the kingdom. On the 8th a South-west gale blew in the Baltic, and a gale from North-west on the Norwegian coast, but the force remained moderate in our Islands, although the direction gradually backed again to the Westward. On the 10th it backed still more, and South-west became the prevailing direction, and at the close of the day the force increased considerably over the northern portion of the kingdom, and in places attained the force of a gale. Another shift to West now ensued, but only continued for a very short time, and by the close of the 12th light Southerly winds again predominated and continued to do so for a few days. On the 15th the force greatly increased, and a well-marked cyclonic circulation became established over the kingdom, the wind direction being Westerly in the south of England, Southerly on the eastern coasts, Easterly in Scotland, and Northerly in Ireland. As the depression moved away, Westerly and North-westerly winds became general, and continued till the 21st; a retrograde movement then began, and for a day or two light to moderate Southerly winds blew, but after this the direction veered again to South-west, and on the 26th to West, which continued to be the prevailing point throughout the remainder of the month. It will be seen, therefore, that the predominating winds for the month were everywhere Westerly (South-west—North-west); Easterly winds were scarcely felt at all, and it was only in the extreme north that the percentage of wind from any point East of North or South was at all noticeable.

Pressure.—The mean pressure for the month was rather below the average, but its distribution, as shown by the Monthly Chart, was normal, the values varying from 30·0 inches at Scilly, to 29·66 inches at Sumburgh Head. At most of the observatories the highest pressures occurred in connection with the anticyclonic system which existed off our south-western coasts early in the month—in Scotland and Ireland at the close of the 7th, or early on the 8th, and at Kew and Falmouth on the 9th; at Stonyhurst, however, the maximum was attained on the 30th, when somewhat similar conditions prevailed. The lowest point was reached at Falmouth on the 14th, and at all the other observatories, except Valencia, on the 15th, at which time the centre of depression No. XXX. lay over the Irish Sea. At Valencia the minimum was reached on the 23rd, when a large depression passed outside our western coasts. The range of pressure was not very large, and only slightly exceeded an inch and a quarter at Stonyhurst, where it was greatest, while it was less than 0·9 inch at Aberdeen. The highest point attained was 30·415 inches at Falmouth, and the lowest 28·976 inches at Stonyhurst.

Movements of the Depressions.—Very few depressions were observed during the month. The most important was No. XXX., which was observed at the close of the 14th over Saint George's Channel, where it remained for two days, after which it passed across northern England to the Baltic. On the 6th an area of low pressure left our eastern coasts and travelled in a north-easterly direction to Lapland, and later in the month a large disturbance skirted our western shores, moving apparently in a northerly direction. Two large anticyclones were observed to the south-west of the British Isles, both of which moved to the eastward and became dispersed over southern or central Europe.

Temperature.—The mean temperature was everywhere low for July, but was especially so over the southern and central portions of England and Ireland, while in Scotland the defect was less marked; the mean ranged from 61° in south-east England to 56° in the north of Scotland, and 53° in the Shetlands. The lowest readings were nearly everywhere recorded between the 6th and 8th, during the prevalence of Northerly or North-westerly winds, and the highest readings on the last two or three days of the month, when Westerly to South-westerly anticyclonic breezes were experienced. 86° was registered in London on the 31st, but it was only at some of the south-eastern and midland stations that so high a temperature as 80° was reached; minima below 40° were, however, recorded in several instances. The range of temperature amounted to 45° in London, and to 44° at Nottingham, Hillington, and Strathfield Turgiss, but generally it varied from between 30° to 40°.

Vapour Tension.—The tension of vapour was greatest along the Channel and south-eastern coasts of England, while it was least—and at the same time very uniformly distributed—over Scotland, Ireland, and the northern half of England. *Relative Humidity*, on the other hand, was somewhat irregular in its distribution, but its range was not large.

Rainfall.—The fall of rain was in most instances greater than the average, although the excess was nowhere very large. The heaviest daily falls occurred generally in the middle of the month—on the 14th or 15th—and at many English stations they were very considerable; at Oscott, for example, upwards of 2 inches were measured, and at Buxton, Cheadle, and Marlborough very nearly as much, on the 14th, while at many other stations falls considerably exceeding an inch in 24 hours were recorded.

TABLE A., JULY.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of JULY 1877, together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).						TEMPERATURE In the Shade (In Degrees Fahrenheit).						HYGROMETRIC VALUES.		RAINFALL (In English Inches).
	Mean for the Month.	Extremes.				Range.	Mean for the Month.	Extremes.				Range.	Tension of Vapour (In English Inches).	Relative Humidity (Saturation = 100).	
		Minimum.		Maximum.				Minimum.		Maximum.					
		Reading.	Date.	Reading.	Date.			Reading.	Date.	Reading.	Date.				
	ins.	ins.	D. H.	ins.	D. H.	ins.	°	°	D. H.	°	D. H.	°	in.	%	ins.
Valencia - -	29·936	29·226	23rd, 1 p.m. 2 p.m. 3 p.m.	30·375	7th, 10 p.m.	1·149	57·6	48·4	5th, 8 a.m.	67·3	30th, 2 p.m.	18·9	·395	83	2·872
Armagh - -	·839	·097	15th, 6 p.m.	·277	7th, 9 p.m.	1·180	56·4	42·0	6th, 4 a.m.	69·7	30th, 3 p.m.	27·7	·382	84	3·270
Glasgow - -	·761	·087	15th, 6 p.m.	·144	8th, 10 a.m.	1·057	55·6	45·9	6th, 1 a.m. 8th, 1 a.m.	65·7	30th, 9 a.m.	19·8	·364	82	2·939
Aberdeen - -	·741*	·253	15th, 5 p.m.	·126	7th, Midt.	0·873	56·0*	41·8	8th, 3 a.m.	71·0	30th, 3 p.m.	29·2	·355	79	3·025
Falmouth - -	·989	29·310	14th, 5 p.m.	·415	9th, 10 a.m.	1·105	59·3	49·9	6th, 4 a.m.	69·2	29th, 1 p.m.	19·3	·415	82	3·995
Stonyhurst -	·841	28·976	15th, 11 a.m. Noon.	·247	30th, Noon	1·271	56·8	43·4	19th, 3 a.m.	68·5	30th, 3 p.m. 5 p.m.	25·1	·377	81	5·221
Kew - -	29·920	29·116	15th, 2 a.m.	30·319	9th, 10 a.m.	1·203	60·9	44·7	8th, 4 a.m.	82·8	31st, 4 p.m.	38·1	·406	77	3·145

* Mean for one day is approximate.

TABLE B., JULY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not

(The Stations are grouped in Districts, and then arranged in order of

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	AIR TEMPERATURE.									
						Means of			Absolute Extremes.			
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°	°	°		°	
0. SCOTLAND, N.	Sandwick Manse (Orkneys)	29·686	55·2	52·8	54·0	50·2	58·9	54·6	45·0	23rd	65·7	22nd
1. SCOTLAND, E.	Glenalmond	29·760	56·0	53·1	54·6	48·6	62·3	55·5	38·5	20th	70·0	29th
2. ENGLAND, N.E.	Seaham	29·789	60·8	56·2	58·5	51·5	65·2	58·4	42·6	6th	77·2	29th
	Durham*	29·786	60·5	53·5	57·0	50·1	67·0	58·6	39·3	5th	79·0	30th
	Hull	29·851	62·1	58·3	60·2	53·0	68·1	60·6	44·0	7th, 8th	74·5	10th, 23rd, 29th, 30th.
	Kelstern 𝔐	29·864	60·3	55·4	57·9	50·0	66·9	58·5	41·1	8th	78·1	29th
3. ENGLAND, E.	Hillington 𝔐	29·863	62·0	57·8	59·9	50·6	69·6	60·1	37·7	8th	81·6	31st
	Audley End 𝔐	29·909	62·4	57·7	60·1	51·4	69·3	60·4	45·2	7th, 8th	83·0	31st
	Chigwell Row	29·947	60·4	59·6	60·0	51·9	67·2	59·6	43·0	8th	82·0	31st
4. MIDLAND COUNTIES.	Wakefield 𝔐	29·853	60·4	57·6	59·0	52·4	65·9	59·2	39·8	5th	74·5	30th
	Buxton 𝔐	29·872	56·1	53·2	54·7	48·9	61·3	55·1	39·9	5th	71·7	30th
	Cheadle 𝔐	29·880	56·8	55·1	55·9	49·7	62·8	56·3	42·2	8th	74·1	30th
	Leicester	29·884	60·4	59·5	60·0	52·2	67·0	59·6	44·4	8th	77·7	29th
	Uppingham	29·882	60·1	56·3	58·2	50·5	66·8	58·7	42·3	7th, 8th	78·0	29th
	Oscott	29·877	59·4	56·5	58·0	51·4	66·9	59·2	43·4	8th	79·1	30th
	Churchstoke 𝔐	29·912	58·5	54·9	56·7	50·7	63·3	57·0	40·2	7th	76·1	30th
	Hereford 𝔐	29·898	60·2	56·4	58·3	50·8	66·0	58·4	39·3	5th, 6th	78·1	29th
5. ENGLAND, S.	Marlborough 𝔐	29·939	60·7	56·5	58·6	50·4	67·9	59·2	41·4	7th	82·5	31st
	Strathfield Turgiss 𝔐	29·935	62·4	57·8	60·1	50·4	69·4	59·9	39·3	8th	83·2	31st
	Ramsgate 𝔐 †	—	—	—	—	—	—	—	44·3	7th	81·4	29th
	Folkestone †	—	—	—	—	—	—	—	44·8	8th	72·0	?
	Hastings	29·952	61·9	58·3	60·1	53·3	65·8	59·6	45·3	7th, 8th	75·0	31st
6. SCOTLAND, W.	——	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND, N.W.	Hawes 𝔐	29·842	56·0	53·5	54·6	48·7	61·1	54·9	35·0	6th	68·0	30th
	Prestwich	29·852	57·0	55·1	56·1	50·7	63·4	57·1	43·1	8th	71·5	30th
	Llandudno 𝔐	29·867	60·4	57·0	58·7	54·3	66·4	60·4	47·0	6th	74·1	30th
8. ENGLAND, S.W.	Caermarthen 𝔐	29·912	59·9	55·9	57·9	52·0	65·3	58·7	39·8	6th	72·6	28th
	Dartmoor 𝔐	29·980	55·3	51·8	53·6	48·3	60·0	54·2	42·2	6th	74·2	30th
	Babbacombe 𝔐	29·971	61·1	56·0	58·6	51·8	66·8	59·3	44·0	6th	77·9	29th
9. IRELAND, N.	Markree Castle	29·842	56·8	54·0	55·4	50·1	61·9	56·0	40·9	5th	73·4	30th
10. IRELAND, S.	Dublin	29·884	59·7	57·3	58·5	52·9	64·8	58·9	44·6	7th	72·5	30th
	Parsonstown	29·889	58·7	55·2	57·0	51·8	64·0	57·9	41·2	6th	72·6	29th
CHANNEL	Jersey (St. Aubin's)	30·026	63·2	58·9	61·1	54·4	67·3	60·9	45·5	9th	81·1	31st

NOTE.—The stations marked 𝔐 are in connexion with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day. † Observer from home during part of the month.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of JULY 1877.
corrected for Diurnal Range.

Latitude, beginning in each case with the Station lying furthest North.)

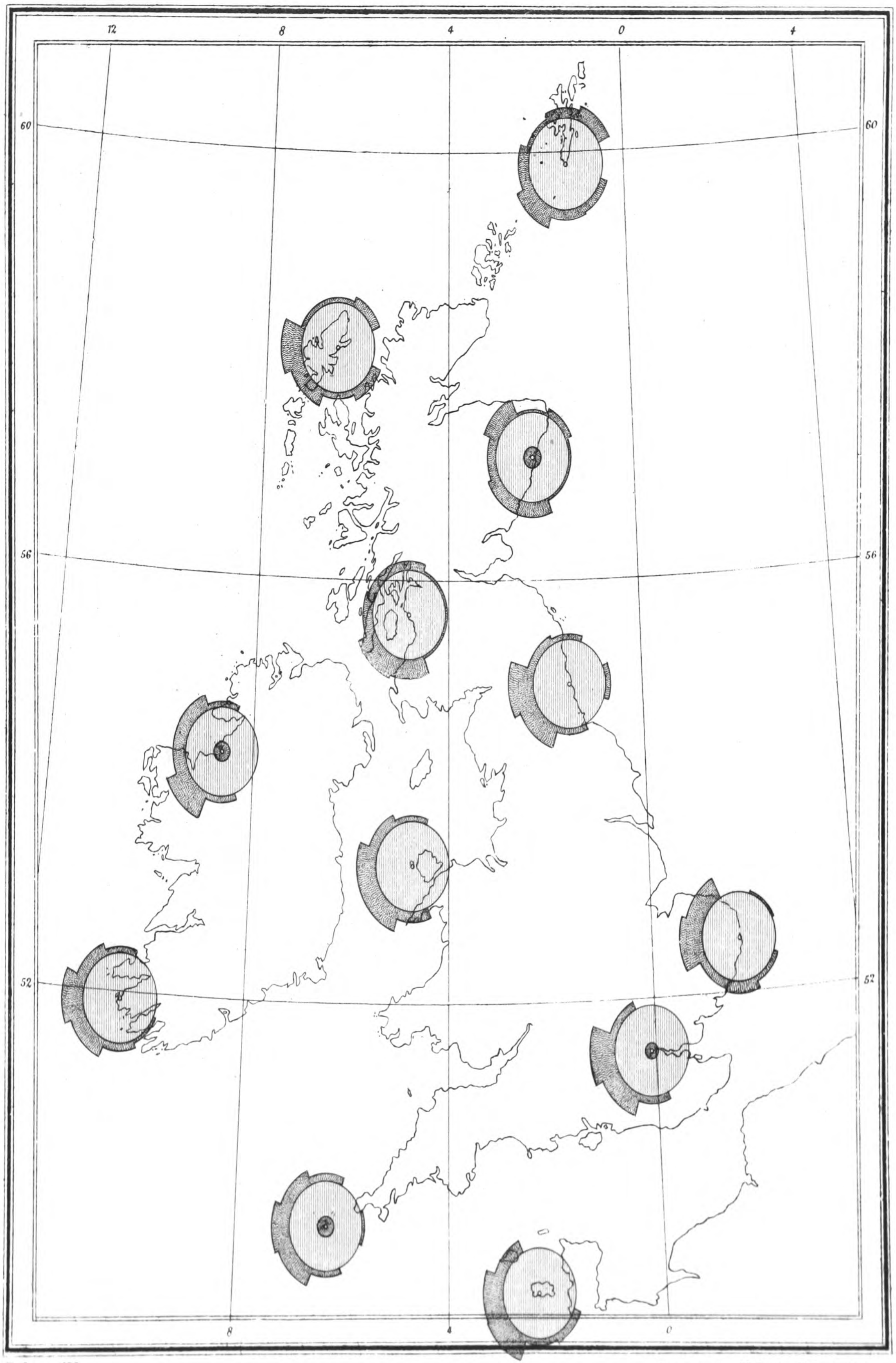
TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10).			RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	%	%	%				ins.	ins.																	
·355	·350	·353	82	87	85	7·4	6·4	6·9	2·850	·480	19th	24	1	1	0	1	14	1	1	1	3	10	4	11	21	5	6
·381	·365	·373	84	90	87	8·5	8·1	8·3	4·840	1·410	14th	21	0	0	2	0	17	1	3	2	3	6	2	14	22	6	4
·405	·388	·397	77	86	82	6·6	6·2	6·4	3·013	·740	14th	17	0	0	3	0	11	0	3	0	1	3	7	14	16	7	11
·406	·382	·394	77	92	85	8·2	6·5	7·4	3·809	1·061	14th	15	0	0	3	0	15	0	2	1	1	4	11	17	15	7	4
·423	·403	·413	76	82	79	6·8	5·8	6·3	2·500	·790	14th	16	0	0	1	0	10	0	3	0	0	0	5	10	20	23	1
·427	·408	·418	82	92	87	7·2	6·3	6·8	2·684	·604	17th	16	0	0	3	1	11	0	3	2	0	0	10	20	14	9	4
·438	·427	·433	79	89	84	7·1	7·6	7·4	2·454	·425	14th	17	0	0	5	0	11	0	1	1	0	1	4	26	14	15	0
·414	·420	·417	74	87	80	7·2	5·5	6·4	2·910	·550	14th	16	0	0	5	1	7	0	0	0	0	0	0	24	15	20	3
·404	·419	·412	77	82	80	7·3	8·1	7·7	3·770	·550	5th	12	0	2	5	0	13	0	1	0	2	1	9	26	14	7	2
·384	·385	·385	73	81	77	7·7	6·2	7·0	2·920	·880	14th	18	0	0	2	1	12	0	1	0	0	0	5	12	29	3	12
·359	·355	·357	80	86	83	8·5	8·4	8·5	5·735	1·970	14th	23	0	0	0	0	19	0	3	0	0	0	2	8	17	29	3
·381	·377	·379	82	87	84	8·0	7·7	7·8	4·340	1·950	14th	16	0	0	6	1	16	0	3	1	0	2	5	11	13	23	4
·383	·393	·388	73	77	75	8·7	7·1	7·9	2·660	·730	14th	18	0	0	0	0	19	0	1	1	0	1	6	19	21	10	3
·439	·415	·427	85	91	88	8·3	7·5	7·9	2·670	·620	23rd	17	0	0	3	0	17	0	2	1	0	1	6	14	26	10	2
·407	·407	·407	80	88	84	8·5	7·5	8·0	3·700	2·020	14th	16	0	0	3	1	22	0	3	1	0	0	12	22	13	10	1
·422	·402	·412	86	92	89	5·9	7·1	6·5	3·665	1·560	14th	19	0	1	4	2	6	1	1	0	0	0	8	20	19	5	9
·388	·389	·389	74	85	79	7·5	5·9	6·7	2·906	·890	14th	15	0	1	2	0	10	0	1	0	0	1	4	10	21	1	24
·415	·407	·411	79	88	83	7·9	6·2	7·1	5·031	1·954	14th	20	0	0	2	0	13	0	0	0	0	1	2	18	20	4	17
·406	·410	·408	72	85	79	6·9	5·8	6·4	2·643	·720	14th	12	0	2	5	3	10	0	0	0	0	1	2	17	33	4	5
—	—	—	—	—	—	—	—	—	1·701	·504	14th	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	1·870	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·424	·430	·427	77	88	82	6·4	5·8	6·1	2·565	·570	14th	16	0	1	3	5	11	2	3	0	0	1	7	28	17	5	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·372	·369	·371	83	90	87	9·0	7·8	8·4	4·920	1·230	14th	25	0	1	3	0	20	0	0	0	2	2	3	14	30	4	7
·377	·374	·376	81	86	84	9·3	7·9	8·6	6·037	1·860	15th	22	0	2	2	0	23	0	0	1	0	2	17	9	21	2	10
·407	·393	·400	77	85	81	8·4	8·0	8·2	5·280	1·650	15th	19	0	3	3	1	22	0	2	1	1	0	1	7	42	8	0
·449	·430	·440	87	95	91	8·3	7·1	7·7	4·920	1·320	22nd	17	0	0	0	0	16	0	1	0	0	0	2	20	15	9	15
·378	·362	·370	86	93	89	8·3	6·5	7·4	10·670	1·860	23rd	18	0	0	0	1	16	1	0	2	0	0	4	11	19	18	8
·409	·386	·398	76	85	81	8·0	5·7	6·9	2·430	·800	14th	12	0	0	0	1	15	0	1	1	3	0	2	16	22	13	4
·389	·377	·383	84	88	86	9·0	8·7	8·9	3·261	·568	15th	27	0	0	2	0	23	0	2	0	0	0	4	23	9	14	10
·387	·392	·390	75	83	79	7·4	6·5	7·0	3·300	·770	15th	25	0	3	3	1	13	0	3	0	0	1	3	9	31	12	3
·408	·395	·402	83	90	86	8·8	7·9	8·4	2·316	·739	15th	24	0	0	0	0	20	0	1	0	0	4	5	22	16	9	5
·465	·460	·463	81	92	86	7·1	5·7	6·4	2·503	·660	14th	15	0	0	0	6	15	0	0	0	0	2	3	19	22	5	11

TABLE C., JULY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS during the Month of JULY 1877. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.								TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of								
				Means of			Absolute Extremes.																									
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
		ins.	°	°	°	°	°		°		in.	%		ins.	ins.																	
0. SCOTLAND, N.	Sumburgh Head	29·661	53·0	48·5	57·3	52·9	41	3rd, 11th	62	18th	0·361	90	8·4	2·62	0·41	23rd	24	0	0	0	1	18	2	3	5	0	3	4	9	5	2	0
	Thurso	29·675	55·9	49·3	62·7	56·0	?39	7th	72	22nd	·371	83	7·8	3·42	0·42	15th	27	0	0	0	2	16	0	2	0	2	3	6	6	8	4	0
	Wick	29·687	55·4	48·2	60·9	54·6	35	7th	68	24th	·366	84	6·4	3·17	0·46	3rd	21	0	0	0	7	14	0	1	0	4	6	3	3	9	5	0
	Stornoway	29·671	54·7	48·1	59·2	53·7	41	20th	63	9th, 23rd	·379	89	7·0	4·03	0·49	15th	27	0	0	0	6	14	3	2	3	0	4	2	7	11	2	0
1. SCOTLAND, E.	Nairn	29·700	56·5	50·8	63·2	57·0	40	5th	70	9th, 22nd	·343	75	6·1	3·17	0·53	18th	21	0	0	1	8	14	1	0	2	0	0	0	6	11	1	11
	Aberdeen	29·710	57·2	50·5	63·4	57·0	42	8th	72	30th	·362	77	6·1	3·09	0·45	19th	20	0	0	0	5	8	0	1	2	1	1	6	6	4	7	3
	Leith	29·741	57·3	51·5	66·2	58·9	45	8th	72	31st	·380	80	7·1	4·09	1·08	17th	25	0	2	1	0	9	0	0	3	1	1	0	6	13	5	2
2. ENGLAND, N.E.	Shields	29·756	58·4	52·8	63·5	58·2	44	6th	73	29th, 30th	·383	78	7·4	2·73	0·70	17th	18	0	0	2	3	15	2	2	0	2	0	2	9	13	3	0
	Scarborough	29·813	60·5	54·0	65·5	59·8	47	7th, 8th	73	29th, 30th	·392	75	6·1	2·44	0·56	14th	10	0	0	1	7	8	0	2	0	0	1	3	9	11	3	2
	York	29·835	58·5	51·0	66·5	58·8	42	5th, 8th	73	30th	·386	78	7·0	3·13	0·70	14th	15	0	1	3	5	14	0	1	0	1	0	5	7	12	5	0
3. ENGLAND, E.	Yarmouth	29·892	60·5	54·2	66·9	60·6	45	8th	81	31st	·443	84	5·0	2·89	0·54	1st, 14th	18	0	1	3	12	6	1	0	1	0	2	4	3	12	9	0
	Cambridge	29·904	60·1	51·4	70·0	60·7	45	6th, 7th, 8th.	83	31st	·440	85	7·2	2·90	0·79	14th	17	0	0	2	4	15	0	2	0	0	0	1	17	6	5	0
4. MIDLAND COUNTIES.	Nottingham	29·880	61·8	51·3	72·4	61·9	40	8th	84	30th	·423	77	7·4	2·42	0·77	14th	19	0	0	5	4	17	1	2	1	0	1	8	13	3	2	1
	Oxford	29·914	59·6	52·0	70·4	61·2	42	8th	82	31st	·406	79	7·5	3·34	1·08	14th	14	0	0	0	4	18	0	0	0	0	0	4	9	7	4	7
5. ENGLAND, S.	London	29·932	61·0	52·5	70·5	61·5	41	8th	86	31st	·405	76	6·6	2·86	0·91	16th	14	0	2	5	4	12	0	0	0	0	0	3	9	14	3	2
	Dover	29·942	62·7	56·4	66·5	61·5	49	8th	72	31st	·433	77	3·2	2·07	0·54	7th	15	0	1	1	17	2	0	2	0	0	0	0	17	10	2	0
	Hurst Castle	29·958	61·3	55·1	64·7	59·9	45	8th	74	31st	·457	84	5·9	2·67	0·96	14th	9	0	0	0	9	11	0	1	1	0	0	0	4	19	5	1
6. SCOTLAND, W.	Ardrossan	29·769	56·5	53·7	61·9	57·8	45	5th	66	17th	·381	83	8·1	3·62	0·55	8th	24	0	0	0	0	15	0	3	1	1	1	8	9	5	3	0
7. ENGLAND, N.W.	Liverpool	29·847	57·5	53·9	63·4	58·7	44	5th	70	30th	·380	80	8·5	4·51	1·32	14th	17	0	0	0	2	21	1	0	0	0	3	3	6	18	1	0
	Holyhead	29·857	56·7	53·8	62·7	58·3	50	5th	68	28th, 29th	·403	87	6·8	4·53	1·54	14th	23	0	0	0	6	12	2	2	0	0	0	4	10	10	5	0
8. ENGLAND, S.W.	Pembroke	29·922	57·3	55·2	61·8	58·5	50	6th	68	12th	·407	86	6·4	2·58	0·77	22nd	19	0	0	0	8	14	3	0	0	0	0	3	6	10	11	1
	Portishead	29·918	59·3	53·0	66·4	59·7	47	5th, 6th	73	30th	·423	84	7·1	3·48	0·99	14th	17	0	0	0	3	15	4	0	0	0	2	3	12	13	1	0
	Plymouth	29·971	59·9	53·1	67·5	60·3	45	5th, 8th	75	29th	·439	86	7·3	2·83	0·77	14th	12	0	0	0	6	20	0	0	1	0	0	3	8	5	9	5
9. IRELAND, N.	Greencastle	29·761	56·1	51·0	62·0	56·5	43	5th	70	30th	·387	85	8·9	6·03	1·35	16th	29	0	0	0	1	24	0	3	1	0	1	5	6	12	3	0
	Donaghadee	29·801	57·3	51·7	63·0	57·4	43	5th	73	30th	·410	87	6·4	3·42	0·69	14th	24	0	0	0	6	11	0	2	1	1	2	2	7	12	4	0
10. IRELAND, S.	Kingstown	29·872	57·6	54·1	64·1	59·1	47	7th	72	29th	·371	78	6·4	2·97	0·68	15th	18	0	3	4	5	8	1	0	0	1	2	1	2	15	10	0
	Valencia	29·934	57·6	52·6	62·6	57·6	46	5th	65	9th, 27th, 28th, 29th, 31st.	·404	84	8·7	2·75	0·46	25th	24	0	0	0	0	22	4	2	0	0	1	3	8	11	5	1
	Roche's Point	29·929	58·1	52·8	64·7	58·8	47	4th, 5th, 7th.	73	28th	·376	77	5·7	2·86	0·55	3rd	16	0	0	0	5	7	1	6	0	0	0	1	7	8	9	0
CHANNEL	Scilly	29·998	59·7	57·0	63·5	60·3	53	5th	69	10th	·436	86	8·5	2·72	0·87	22nd	20	0	0	0	0	21	3	3	0	1	0	2	7	9	6	3

MONTHLY WIND CHART FOR JULY 1877.

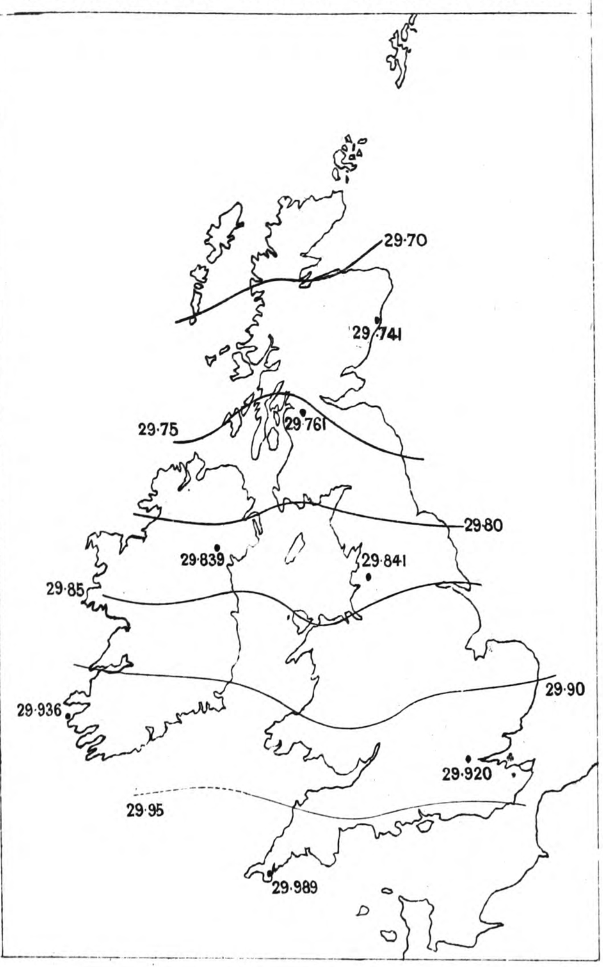

12
8
4
0
4
60
60
56
56
52
52
8
4
0

To face p. 100.

DANGERFIELD LITH 22 BEDFORD S^T COVENT GARDEN.
9516

MONTHLY WEATHER CHART. JULY 1877.

1. DISTRIBUTION OF MEAN PRESSURE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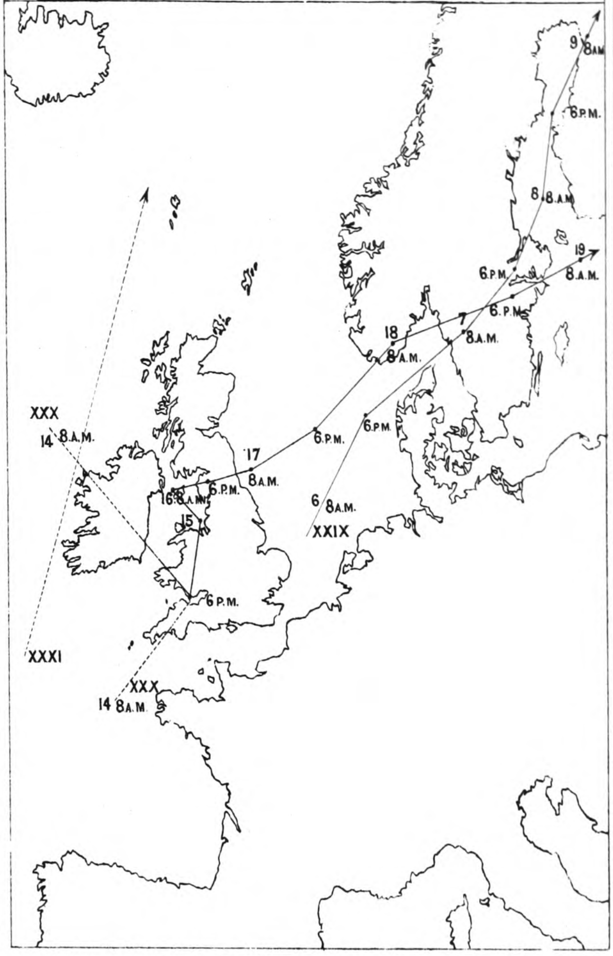
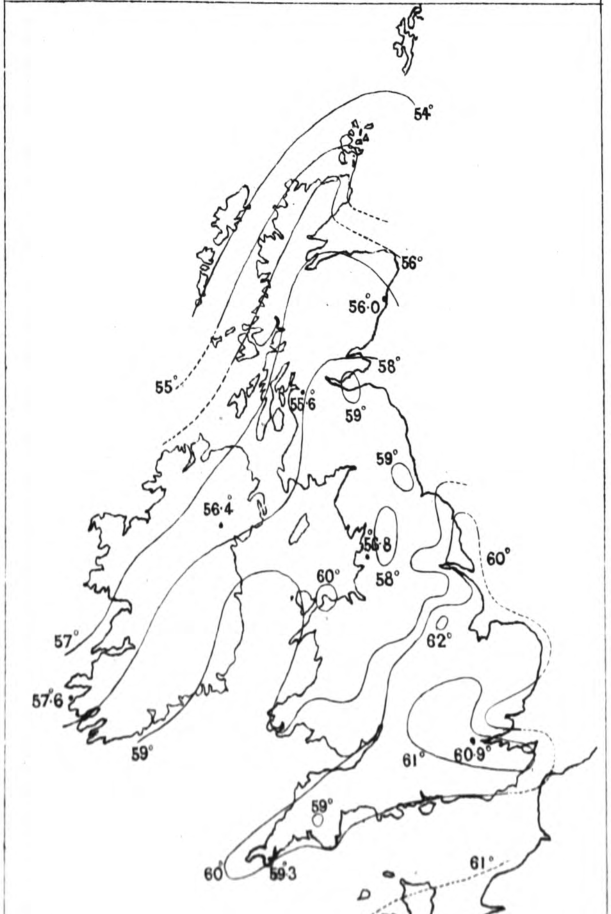
29·741
29·75
29·761
29·80
29·839
29·841
29·85
29·90
29·936
29·920
29·95
29·989

2. MOVEMENTS OF DEPRESSIONS.


9
8 A.M.
6 P.M.
8
8 A.M.
19
8 A.M.
6 P.M.
6 P.M.
7
8 A.M.
18
8 A.M.
XXX
14
8 A.M.
6 P.M.
6 P.M.
17
8 A.M.
16
8 A.M.
6 P.M.
6
8 A.M.
15
XXIX
6 P.M.
XXXI
XXX
14
8 A.M.

3. DISTRIBUTION OF MEAN TEMPERATURE.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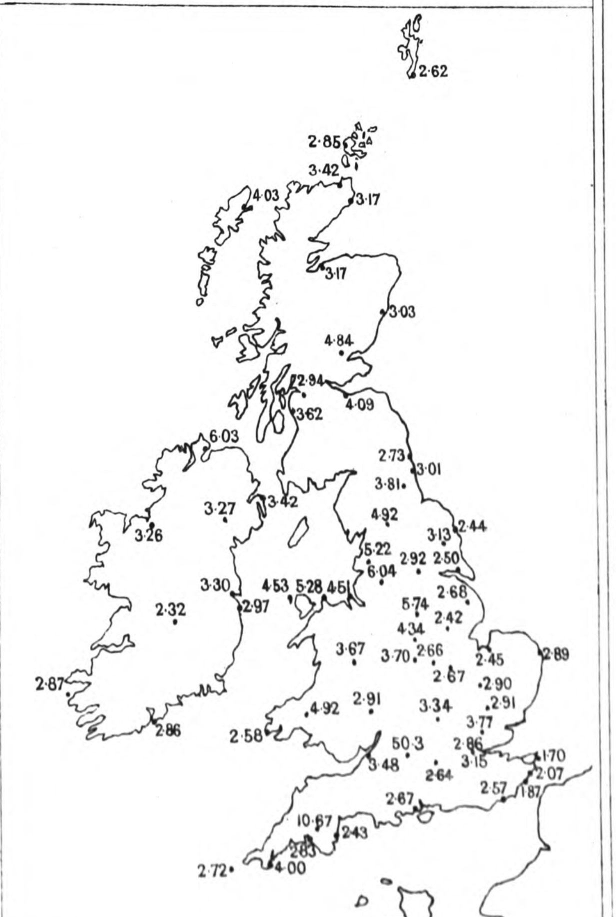
56°
56·0°
58°
55°
55·6°
59°
59°
56·4°
56·8°
60°
58°
60°
57°
62°
57·6°
59°
61°
60·9°
59°
60°
59·3°
61°

4. RAINFALL


2·62
2·85
3·42
4·03
3·17
3·17
3·03
4·84
2·94
4·09
3·62
6·03
2·73
3·01
3·81
3·27
3·42
4·92
3·26
3·13
2·44
5·22
2·92
2·50
6·04
3·30
4·53
5·28
4·51
2·68
2·97
5·74
2·32
2·42
4·34
3·67
3·70
2·66
2·45
2·89
2·67
2·87
2·90
2·91
3·34
2·91
4·92
3·77
2·86
2·58
50·3
2·86
3·48
3·15
1·70
2·64
2·07
2·57
1·87
2·67
10·67
2·43
2·83
2·72
4·00
2·60

To follow Wind Chart for July.

DANGERFIELD LITH 22 BEDFORD S.T COVENT GARDEN.
8619

REMARKS FOR AUGUST 1877.

(*Tables A. to C., August, with Monthly Wind and Weather Charts.*)

Wind.—During the first four days of the month a light to moderate North-westerly wind prevailed, but at the close of the 4th a Southerly current set in and continued, at times with considerable strength, till the 8th. A very distinct cyclonic circulation was then shown, around a depression in the south-west, and in many places the wind attained the force of a gale; but as the disturbance passed away North-westerly and Northerly winds again predominated. At the close of the 12th, however, an Easterly wind was reported from the northern stations, and this current soon spread southwards, and continued to blow until the 15th, when it was succeeded, except in the north, by another Southerly breeze. At the close of the 20th the wind was again influenced by a depression to the westward of Ireland, and on the 21st strong East and North-east winds were experienced in Scotland, while equally strong Westerly winds were felt in England. A short spell of North-westerly winds ensued, and was followed on the 24th by another Southerly current; this, however, soon backed to East, and in the south-west reached the strength of a gale, after which it continued to back to North over the greater portion of the kingdom, while on the Channel coasts and over northern and western France it veered to West and blew very strongly. On the 27th, South-west had again become the prevailing direction over southern England, while in the north a light Easterly breeze was experienced. The latter gradually gave way before the Westerly current, which at times blew strongly, and during the remainder of the month moderate to strong Westerly winds, which at times backed to South-west, and at others veered at the northern stations to North, continued to prevail. At the northern stations, therefore, the percentage of Northerly and Easterly winds was large, while that of winds from West and South-west was almost *nil;* further south, however, the latter predominated, although at the south-western stations the percentage of wind from between South and East was very considerable.

Pressure.—From the monthly chart it will be seen that upon the whole this was rather below the average for the month, while its distribution over the kingdom was very uniform, the mean values varying from 29·90 inches on the Channel coasts to 29·80 inches over the northern portions of the kingdom. The highest readings occurred at Valencia on the 2nd, at the northern stations on the 12th, and in the south of England on the 23rd or 24th, but at no station did the mercury rise much above 30·2 inches. The lowest readings occurred generally on the 8th with depression No. XXXII., but at Kew and Glasgow not until the 26th and 28th respectively; at Valencia the barometer fell below 28·9 inches, but at no other observatory did it fall so low as 29·2 inches, and the range of pressure was therefore generally small.

Movements of the Depressions.—These were rather more numerous than in July, but not very deep, and generally they followed a north-easterly course; in one case, however, (No. XXXII.) after reaching the north-east of England, the easterly movement was checked and the system moved northward along the eastern coast of Scotland. Two anticyclonic systems were observed, both of which became dispersed over central Europe.

Temperature.—The mean temperature was again generally below the average, although not to quite the same extent as in July, the values ranging from 63° in the south-east of England to 53° in north Scotland. The lowest readings were observed nearly everywhere on the 23rd or 24th, with a light Northerly or North-westerly wind; the highest readings were more irregular in their occurrence, but in most districts they were recorded on or about the 6th or the 20th, at both of which dates Southerly winds prevailed. At Strathfield Turgiss the temperature fell as low as 35°·4, and at several other stations to considerably below 40°, while, on the other hand, it was only at three stations that it rose as high as 80°. The range of temperature amounted to upwards of 40° at some stations, but at most places it was about 30°.

Vapour Tension was greatest on the Channel coasts, and least in the north of Scotland, comparatively high values being also found over central England. *Relative Humidity* was very uniform in its distribution over the kingdom, but both the highest and lowest mean values were found in central England.

Rainfall.—The month was decidedly a wet one, the rainfall being in excess of the average at nearly every station, and very considerably so at many. The heaviest daily falls were recorded at Roche's Point on the 18th, and at Ardrossan and Glenalmond on the 20th, and amounted to 1·87 inches, 1·85 inches, and 1·94 inches respectively, while falls of upwards of an inch in 24 hours were registered at several other stations.

TABLE A., AUGUST.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of AUGUST 1877; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).						TEMPERATURE in the Shade (In Degrees Fahrenheit).						HYGROMETRIC VALUES.		RAINFALL (In English Inches).
	Mean for the Month.	Extremes.				Range.	Mean for the Month.	Extremes.				Range.	Tension of Vapour (In English Inches).	Relative Humidity (Saturation=100).	
		Minimum.		Maximum.				Minimum.		Maximum.					
		Reading.	Date.	Reading.	Date.			Reading.	Date.	Reading.	Date.				
	ins.	ins.	D. H.	ins.	D. H.	ins.	°	°	D. H.	°	D. H.	°	in.	%	ins.
Valencia - -	29·811	28·887	8th, 2 a.m.	30·214	2nd, 1 p.m.	1·327	58·5	45·5	23rd, 4 a.m.	71·5	15th, 5 p.m. 6 p.m.	26·0	·409	84	6·680
Armagh - -	·814	29·224	8th, 5 a.m. 7 a.m.	·148	12th, 11 a.m.	0·924	56·6	41·2	23rd, 6 a.m.	69·0	19th, 2 p.m.	27·8	·397	86	2·680
Glasgow - -	·797*	·299	28th, 7 a.m. 9 a.m.	·192	12th, 9 p.m. 10 p.m.	0·893	54·8	42·8	23rd, 6 a.m.	69·3	6th, 3 p.m.?	26·5	·356	83	6·608
Aberdeen - -	·819	·297	8th, 7 a.m.	·243	12th, 11 p.m.	0·946	53·2	36·6	25th, 5 a.m.	64·1	16th, 3 p.m.	27·5	·347	86	7·038
Falmouth - -	·894	·255	8th, 10 a.m.	·218	23rd, 10 p.m.	0·963	60·1	48·0	24th, 6 a.m.	69·4	19th, 1 p.m. 3 p.m.	21·4	·443	86	6·925
Stonyhurst - -	·817	·306	8th, 6 p.m.	·129	12th, 9 p.m.	0·823	57·7	43·9	24th, 2 a.m.	71·4	6th, 2 p.m.	27·5	·394	83	7·348
Kew - -	29·875	29·375	26th, 2 a.m.	30·206	24th, 9 a.m.	0·831	61·6	42·0	24th, 6 a.m.	79·0	20th, 1 p.m.	47·0	·420	77	2·820

* Means for three days are approximate.

TABLE B., AUGUST.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not
(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	AIR TEMPERATURE.									
						Means of			Absolute Extremes.			
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°	°	°		°	
0. SCOTLAND, N.	Sandwick Manse (Orkneys)	29·826	53·0	50·8	51·9	48·1	56·5	52·3	40·4	25th	64·0	13th
1. SCOTLAND, E.	Glenalmond	29·820	53·3	51·8	52·6	47·7	62·2	55·0	34·5	25th	71·2	16th
2. ENGLAND, N.E.	Seaham	29·769	57·4	54·1	55·8	50·5	62·5	56·5	40·8	24th	71·0	16th
	Durham*	29·796	59·3	53·7	56·5	49·9	65·0	57·5	37·5	24th	73·5	7th
	Hull	29·829	60·4	57·6	59·0	53·0	66·0	59·5	43·0	24th	74·5	17th
	Kelstern 𝔐	29·840	59·2	55·5	57·4	51·1	66·0	58·6	38·0	24th	74·7	20th
3. ENGLAND, E.	Hillington 𝔐	29·840	61·7	57·3	59·5	51·6	71·3	61·5	36·8	24th	79·5	20th
	Audley End 𝔐	29·874	62·8	57·7	60·3	53·1	69·8	61·5	36·9	24th	80·2	20th
	Chigwell Row	29·910	61·5	59·8	60·7	53·8	68·3	61·1	44·2	24th	78·6	20th
4. MIDLAND COUNTIES.	Wakefield 𝔐	29·831	60·0	57·9	59·0	52·7	66·9	59·8	40·6	24th	74·8	6th
	Buxton 𝔐	29·839	56·4	54·3	55·4	49·7	62·5	56·1	42·2	23rd	70·1	5th
	Cheadle 𝔐	29·848	56·8	54·8	55·8	50·2	63·7	57·0	42·0	24th	73·2	20th
	Leicester	29·846	61·1	59·3	60·2	53·1	67·5	60·3	42·1	24th	78·2	20th
	Uppingham	29·848	60·3	56·2	58·3	51·3	68·0	59·7	41·5	23rd	77·9	20th
	Oscott	29·835	59·6	56·5	58·1	51·8	66·7	59·3	43·0	24th	78·1	20th
	Churchstoke 𝔐	29·870	58·5	55·2	56·9	50·5	64·3	57·4	40·0	12th	72·8	20th
	Hereford 𝔐	29·860	60·6	57·1	58·9	51·7	66·6	59·2	38·9	24th	77·9	20th
5. ENGLAND, S.	Marlborough 𝔐	29·884	61·8	56·7	59·3	52·4	68·3	60·4	36·2	24th	77·3	20th
	Strathfield Turgiss 𝔐	29·880	63·4	57·5	60·5	52·0	69·6	60·8	35·4	24th	79·1	20th
	Ramsgate 𝔐	29·871	64·1	60·4	62·3	56·6	69·4	63·0	44·6	24th	78·2	19th
	Folkestone	29·902	62·9	59·5	61·2	55·0	68·0	61·5	43·1	24th	74·1	6th
	Hastings	29·907	62·6	60·0	61·3	55·7	67·6	61·7	46·4	3rd	75·7	6th
6. SCOTLAND, W.	——	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND, N.W.	Hawes 𝔐	29·834	56·1	53·4	54·8	49·3	62·3	55·8	36·6	24th	70·2	6th
	Prestwich	29·826	58·4	56·1	57·3	51·7	64·5	58·1	42·2	24th	74·2	6th
	Llandudno 𝔐	29·822	60·4	57·3	58·9	54·1	66·2	60·2	47·0	23rd	74·4	6th
8. ENGLAND, S.W.	Caermarthen 𝔐	29·842	60·7	56·7	58·7	52·6	66·7	59·7	40·1	24th	72·8	5th
	Dartmoor 𝔐	29·907	56·5	53·7	55·1	50·1	60·7	55·4	39·6	24th	69·6	14th
	Babbacombe 𝔐	29·899	61·6	57·0	59·3	54·3	66·5	60·4	41·6	24th	72·8	17th, 20th
9. IRELAND, N.	Markree Castle	29·797	58·4	55·0	56·7	50·6	64·2	57·4	42·0	29th	71·1	7th
10. IRELAND, S.	Dublin	29·829	59·0	57·2	58·1	53·3	63·8	58·6	42·9	23rd	70·8	19th
	Parsonstown	29·822	59·5	55·5	57·5	52·6	65·3	59·0	38·0	23rd	73·3	15th
CHANNEL	Jersey (St. Aubin's)	29·974	64·5	60·2	62·4	57·1	69·7	63·4	51·6	24th	79·0	20th

NOTE.—The stations marked thus 𝔐 are in connection with the Royal Meteorological Society.
* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of AUGUST 1877.
corrected for Diurnal Range.
beginning in each case with the Station lying furthest North.)

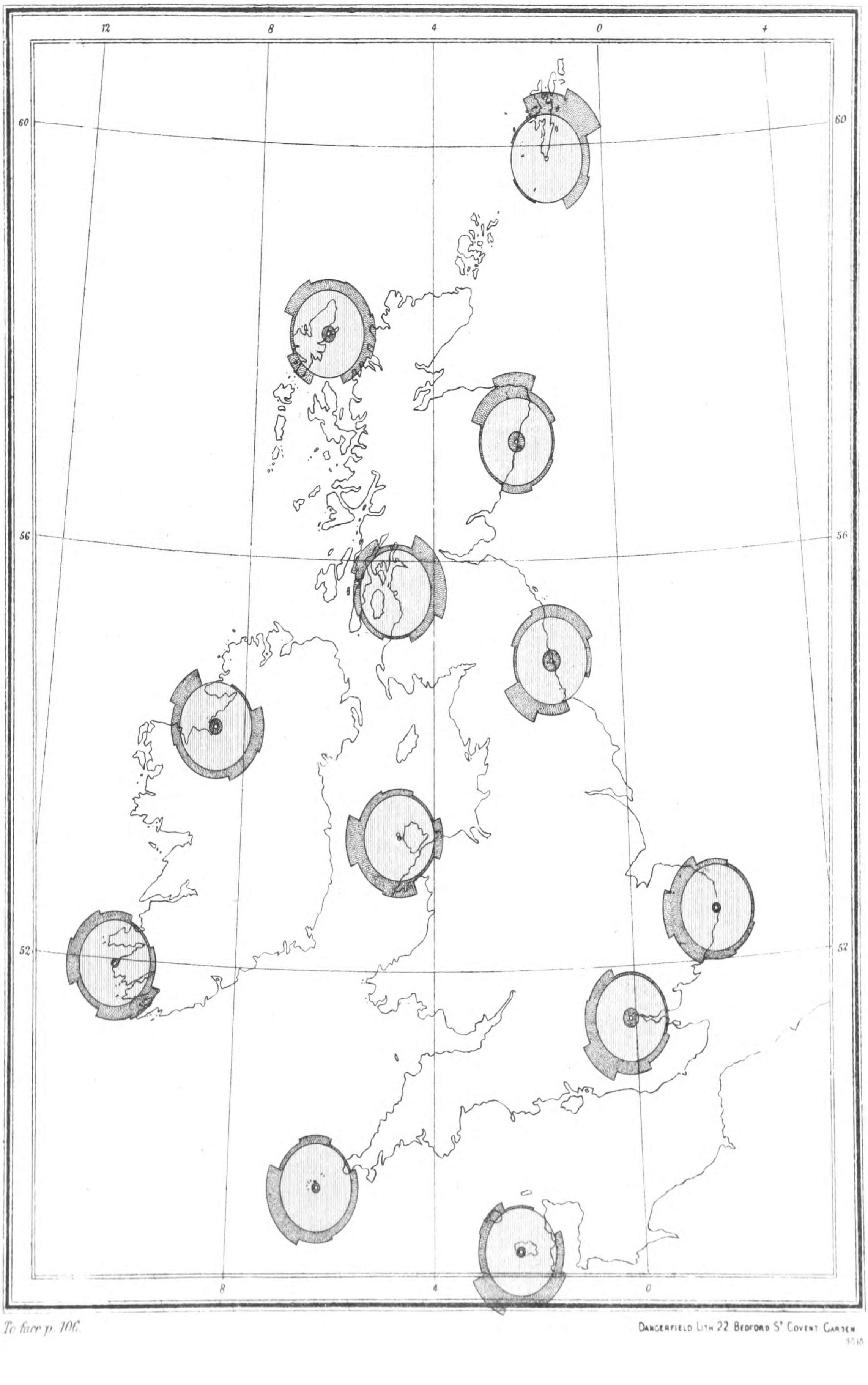
TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10).			RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	%	%	%				ins.	ins.																	
·330	·324	·327	82	87	85	6·6	7·0	6·8	2·500	·460	7th	21	0	0	1	2	13	0	6	7	11	13	0	3	2	12	8
·356	·356	·356	87	91	89	7·9	7·6	7·8	7·660	1·940	20th	23	0	0	3	1	18	3	1	6	17	8	8	8	8	6	0
·423	·390	·407	90	93	92	8·1	7·6	7·9	5·362	·870	18th	26	0	0	4	1	16	0	11	4	2	1	6	8	4	8	18
·432	·397	·415	86	95	90	9·0	8·3	8·7	6·080	·843	18th	21	0	1	6	0	20	0	3	10	4	6	11	8	4	11	5
·430	·429	·430	82	90	86	6·7	6·6	6·7	4·600	1·700	25th	23	0	0	2	2	12	0	3	5	2	4	3	16	20	8	1
·441	·424	·433	87	95	91	6·8	6·0	6·4	4·106	·920	8th	18	0	0	4	2	10	0	4	4	3	7	9	15	14	6	0
·442	·433	·438	80	91	86	7·5	6·8	7·2	3·246	1·025	27th	18	0	0	3	0	14	0	1	6	0	7	5	22	8	13	0
·438	·429	·434	77	89	83	7·2	5·7	6·5	3·690	·770	25th	18	0	1	4	1	14	0	2	4	0	4	4	13	18	13	4
·427	·412	·420	78	80	79	6·8	6·8	6·8	2·400	·700	25th	14	0	0	1	2	11	0	5	3	3	3	9	21	6	4	8
·397	·409	·403	77	84	81	6·7	7·4	7·1	4·060	·750	25th	19	0	0	3	1	12	0	4	2	2	1	10	8	14	8	13
·383	·379	·381	84	89	87	8·0	7·9	8·0	6·155	1·050	8th	23	0	0	2	0	16	0	3	2	6	6	3	11	6	21	4
·394	·394	·394	85	92	89	8·5	6·5	7·5	5·500	·810	25th	23	0	0	6	0	16	1	5	3	5	5	8	9	11	11	5
·398	·403	·401	74	80	77	8·2	6·7	7·5	2·600	·620	27th	17	0	0	1	3	18	0	2	4	1	1	7	20	12	6	9
·418	·407	·413	80	89	84	7·7	6·9	7·3	3·438	1·082	27th	17	0	0	3	1	15	2	3	1	3	2	10	18	7	12	6
·425	·425	·425	83	92	88	8·2	7·0	7·6	3·450	·700	25th	18	0	0	2	0	18	1	1	7	1	4	13	18	8	8	2
·432	·410	·421	88	93	90	6·5	6·5	6·5	4·202	·637	8th	23	4	0	4	3	7	3	2	7	1	11	11	15	5	4	6
·412	·405	·409	78	86	82	7·2	5·3	6·3	4·580	·980	25th	22	0	0	2	3	11	0	1	1	3	1	4	10	11	5	26
·435	·417	·426	79	90	84	7·8	5·0	6·4	4·805	·900	14th	18	0	0	0	2	11	0	3	1	3	1	6	17	10	2	19
·428	·402	·415	73	85	79	6·3	5·9	6·1	2·251	·684	21st	12	0	0	1	3	10	0	0	1	0	6	6	19	15	13	2
·457	·449	·453	76	85	81	6·0	6·8	6·4	2·051	·645	7th	14	0	0	2	2	8	3	0	7	2	6	4	29	4	10	0
·461	·453	·457	80	89	85	5·7	5·5	5·6	2·010	·670	7th	13	0	0	3	3	5	1	2	2	7	0	13	15	15	8	0
·454	·450	·452	80	86	83	5·3	6·1	5·7	2·350	·640	25th	19	0	0	2	7	9	5	4	6	2	2	6	21	12	9	0
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·380	·379	·380	84	82	83	8·8	8·6	8·7	8·900	1·230	20th	24	0	1	3	0	24	0	0	2	15	2	1	9	17	3	13
·394	·401	·398	80	88	84	7·1	7·5	7·3	4·602	·825	8th	24	0	0	5	0	13	0	2	4	9	2	14	8	10	5	8
·413	·401	·407	78	85	82	7·5	5·7	6·6	5·770	1·025	21st	22	0	0	1	6	14	1	6	3	6	9	5	6	21	6	0
·460	·432	·446	86	93	90	7·4	6·4	6·9	7·800	1·230	7th	21	0	0	1	1	14	0	2	0	9	5	4	13	12	7	10
·402	·394	·398	88	95	91	7·0	7·0	7·0	11·910	1·750	26th	23	0	0	2	1	13	2	2	1	8	2	4	25	7	11	2
·436	·421	·429	80	90	85	7·2	5·7	6·5	4·000	·870	7th	18	0	0	2	2	10	1	1	2	5	2	9	14	20	6	3
·412	·383	·398	84	88	86	7·7	8·0	7·9	4·518	·867	27th	28	0	1	2	0	17	0	5	1	8	7	8	3	8	11	11
·416	·409	·413	83	87	85	7·8	6·5	7·2	3·536	·625	18th	24	0	0	1	0	12	0	3	0	7	8	9	5	14	12	4
·427	·412	·420	83	93	88	8·7	7·7	8·2	4·372	·571	1st	24	0	0	0	0	20	0	1	1	4	12	4	15	7	7	11
·459	·444	·452	76	84	80	6·5	4·9	5·7	1·730	·375	7th	15	0	0	2	4	8	1	1	1	7	6	7	18	7	8	7

TABLE C., AUGUST.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of AUGUST 1877. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.								TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
				Means of			Absolute Extremes.																									
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
		ins.	°	°	°	°	°		°		in.	%		ins.	ins.																	
0. SCOTLAND, N.	Sumburgh Head	29·811	51·4	47·0	56·0	51·5	39	25th	59	7th, 9th, 12th, 15th.	0·326	86	8·0	2·22	0·33	27th	19	0	0	0	1	15	1	9	13	3	4	0	1	0	1	0
	Thurso	29·798	53·1	48·4	59·2	53·8	38	25th	71	8th	·351	86	8·0	3·85	0·84	29th	24	0	0	0	3	18	0	3	3	4	6	5	1	3	4	2
	Wick	29·803	53·0	46·9	57·9	52·4	37	25th, 29th	66	8th	·347	86	7·5	2·92	0·51	20th	21	0	0	0	7	20	0	2	3	9	5	2	0	5	5	0
	Stornoway	29·801	53·1	47·5	57·6	52·6	38	23rd	67	13th	·360	89	6·5	2·98	0·48	29th	22	0	0	1	7	15	2	4	5	6	3	0	4	1	6	2
1. SCOTLAND, E.	Nairn	29·801	52·4	49·5	58·9	54·2	38	25th	70	7th, 8th	·338	86	8·3	4·96	0·86	20th	24	0	0	1	2	21	1	0	7	3	1	0	0	5	2	13
	Aberdeen	29·778	54·1	49·8	59·0	54·4	39	25th	65	8th, 16th	·356	84	6·9	6·94	1·70	20th	24	0	1	0	6	14	2	11	3	1	2	3	1	1	6	3
	Leith	29·777	55·0	49·9	62·8	56·4	41	24th, 25th	72	7th, 16th	·378	88	8·0	6·03	1·56	20th	27	0	1	0	2	18	0	2	4	6	3	0	4	8	2	2
2. ENGLAND, N.E.	Shields	29·801	56·2	51·7	61·3	56·5	44	24th, 31st	68	10th, 28th	·399	88	8·1	5·74	1·47	18th	25	0	0	2	2	18	0	5	5	2	0	4	8	1	3	3
	Scarborough	29·808	57·7	53·0	61·8	57·4	45	24th, 25th	69	19th, 21st	·417	87	7·8	4·36	0·72	25th	24	0	0	4	5	19	0	5	2	0	3	4	6	4	5	2
	York	29·816	57·5	51·4	66·3	58·9	42	24th	75	7th, 16th	·402	85	7·2	4·64	0·81	25th	22	0	0	4	6	17	0	1	2	3	2	9	4	4	6	0
3. ENGLAND, E.	Yarmouth	29·851	60·6	55·2	66·4	60·8	44	24th	74	21st	·467	88	5·3	3·32	0·59	26th	18	0	0	5	9	5	1	2	1	1	2	3	6	9	6	1
	Cambridge	29·861	60·1	53·2	70·4	61·8	39	24th	79	20th	·437	84	7·1	3·74	0·64	16th	21	0	0	6	7	18	0	2	2	1	1	5	10	4	6	0
4. MIDLAND COUNTIES.	Nottingham	29·815	60·4	51·8	71·0	61·4	38	24th	84	5th	·427	82	6·7	3·86	0·61	25th	24	0	0	3	7	13	0	1	3	3	4	5	6	4	4	1
	Oxford	29·859	60·6	53·9	69·1	61·5	40	24th	78	20th	·418	80	6·6	3·37	0·47	18th	19	0	0	2	6	13	0	2	0	2	2	4	8	6	1	6
5. ENGLAND, S.	London	29·881	61·0	54·2	71·4	62·8	41	24th	81	14th, 15th, 20th.	·430	81	6·2	2·67	0·70	25th	14	0	0	1	4	7	0	1	1	1	2	5	9	5	4	3
	Dover	29·892	63·5	58·7	67·3	63·0	51	24th	74	20th	·452	78	4·3	2·42	1·08	25th	12	0	0	2	11	3	0	1	1	1	1	2	12	6	6	1
	Hurst Castle	29·909	62·6	56·9	65·8	61·4	43	24th	72	14th	·519	91	6·9	2·04	0·58	7th	16	0	0	0	7	16	0	1	2	2	1	4	7	8	6	0
6. SCOTLAND, W.	Ardrossan	29·782	56·0	52·8	62·9	57·9	45	24th	72	13th, 15th	·383	85	7·9	8·15	1·85	20th	19	0	0	0	2	18	0	2	7	7	3	1	2	3	6	0
7. ENGLAND, N.W.	Liverpool	29·806	58·0	54·3	64·3	59·3	48	31st	75	6th	·401	83	7·6	4·83	1·45	20th	20	0	0	1	2	15	0	2	1	4	7	2	6	7	2	0
	Holyhead	29·807	57·3	54·7	63·4	59·1	49	12th	69	6th	·421	89	7·7	4·07	0·57	20th	24	0	0	0	2	15	0	2	1	4	1	6	5	9	3	0
8. ENGLAND, S.W.	Pembroke	29·829	58·6	56·2	63·2	59·7	50	12th	72	13th	·416	85	6·1	4·67	0·81	21st	21	0	0	1	6	10	5	1	1	3	5	4	3	8	5	1
	Portishead	29·856	60·0	54·1	68·0	61·1	45	24th	78	20th	·441	86	6·7	5·64	1·23	27th	18	0	0	1	4	10	5	2	1	2	1	4	9	9	2	1
	Plymouth	29·885	60·4	55·7	67·2	61·5	41	24th	73	14th	·460	88	6·8	5·08	1·07	26th	21	0	0	0	6	15	1	0	1	5	1	5	6	3	8	2
9. IRELAND, N.	Greencastle	29·768	55·8	52·2	62·9	57·6	41	23rd	71	14th, 16th	·396	89	8·3	5·29	1·01	20th	24	0	0	1	3	23	0	4	4	8	2	3	3	3	4	0
	Donaghadee	29·789	55·7	52·4	61·1	56·8	45	23rd, 31st	67	13th	·409	92	5·5	2·24	0·45	20th	19	0	0	0	9	10	0	2	3	5	3	5	1	9	3	0
10. IRELAND, S.	Kingstown	29·811	57·6	54·7	62·7	58·7	46	23rd	69	19th	·398	83	7·6	3·91	0·81	15th	24	0	1	1	1	13	1	0	0	5	7	5	1	7	6	0
	Valencia	29·811	58·5	53·5	63·3	58·4	43	23rd	68	13th, 19th	·414	84	7·0	6·49	1·06	6th	26	0	0	0	1	9	4	3	1	2	6	5	2	6	5	1
	Roche's Point	29·814	58·3	54·1	64·9	59·5	46	23rd	70	4th, 15th	·409	83	5·4	7·80	1·87	18th	21	0	0	0	8	7	0	4	1	3	4	2	6	6	5	0
CHANNEL	Scilly	29·879	61·2	57·9	64·5	61·2	54	24th	69	15th, 17th	·461	86	7·9	3·93	0·63	26th	22	0	0	1	0	15	5	3	1	3	3	4	7	7	2	1

MONTHLY WIND CHART FOR AUGUST 1877.

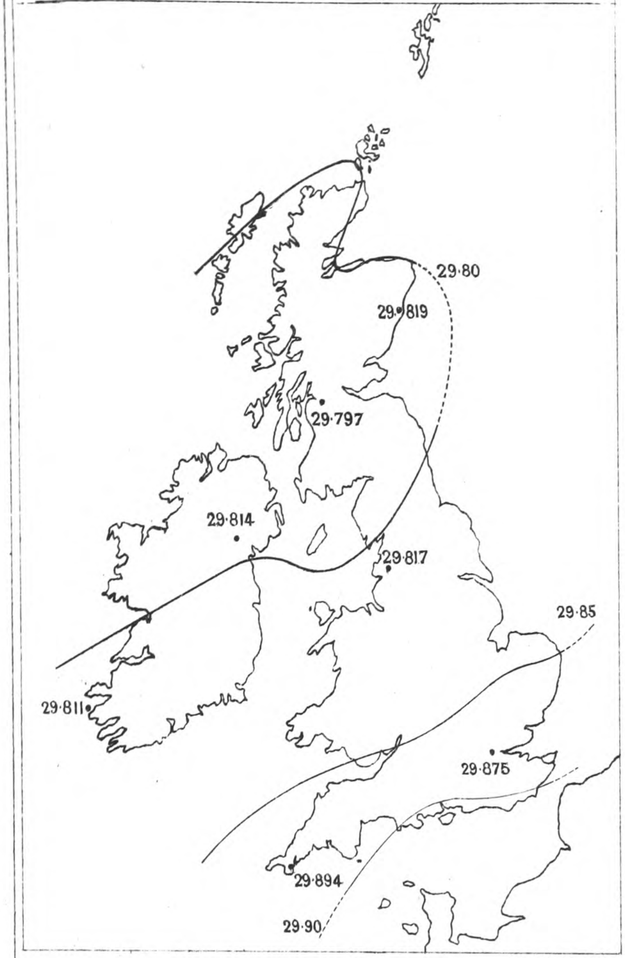

12
8
4
0
4
60
60
56
56
52
52
8
4
0

To face p. 106.

Dangerfield Lith 22 Bedford St Covent Garden

MONTHLY WEATHER CHART. AUGUST 1877.

1. DISTRIBUTION OF MEAN PRESSURE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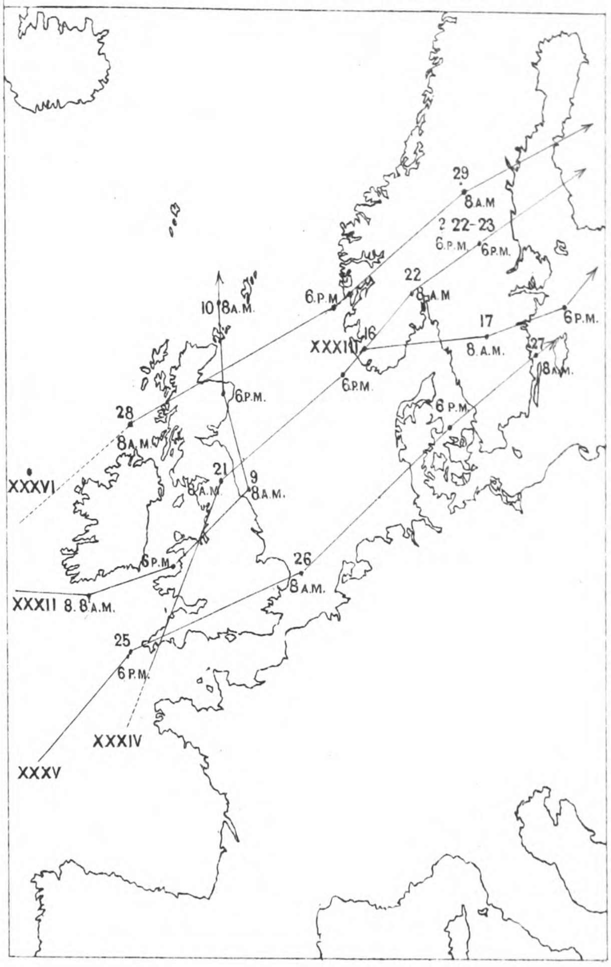
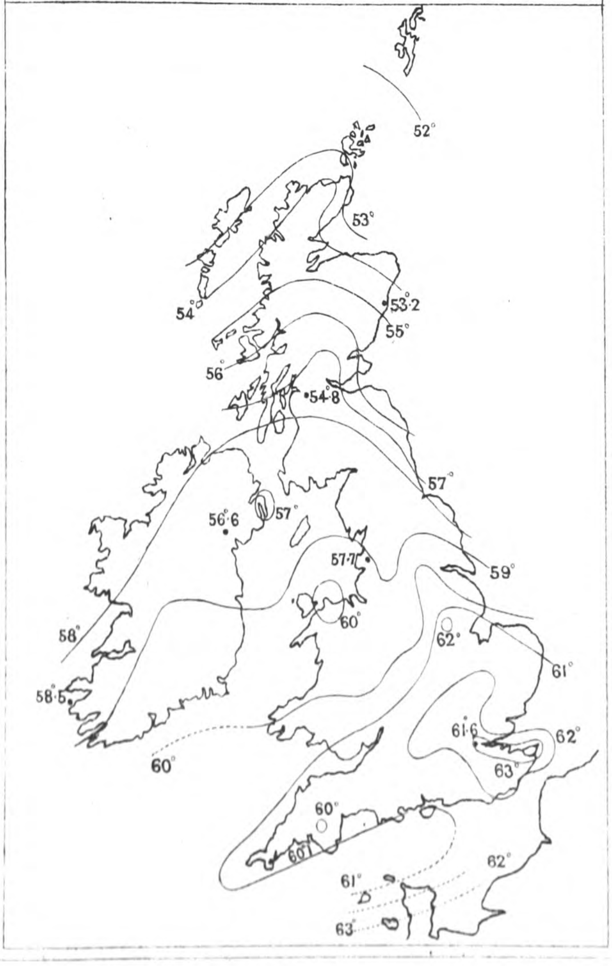
29·797
29·814
29·817
29·85
29·811
29·875
29·894
29·90

2. MOVEMENTS OF DEPRESSIONS.


29
8 A.M
? 22-23
6.P.M.
6P.M.
22
8 A.M
10 8A.M.
6.P.M
XXXII
16
17
8. A.M.
6P.M.
27
8A.M.
6P.M.
6P.M.
6 P.M.
28
8A.M.
XXXVI
21
8A.M.
9
8A.M.
6P.M.
XXXII 8. 8A.M.
26
8A.M.
25
6P.M.
XXXIV
XXXV

3. DISTRIBUTION OF MEAN TEMPERATURE.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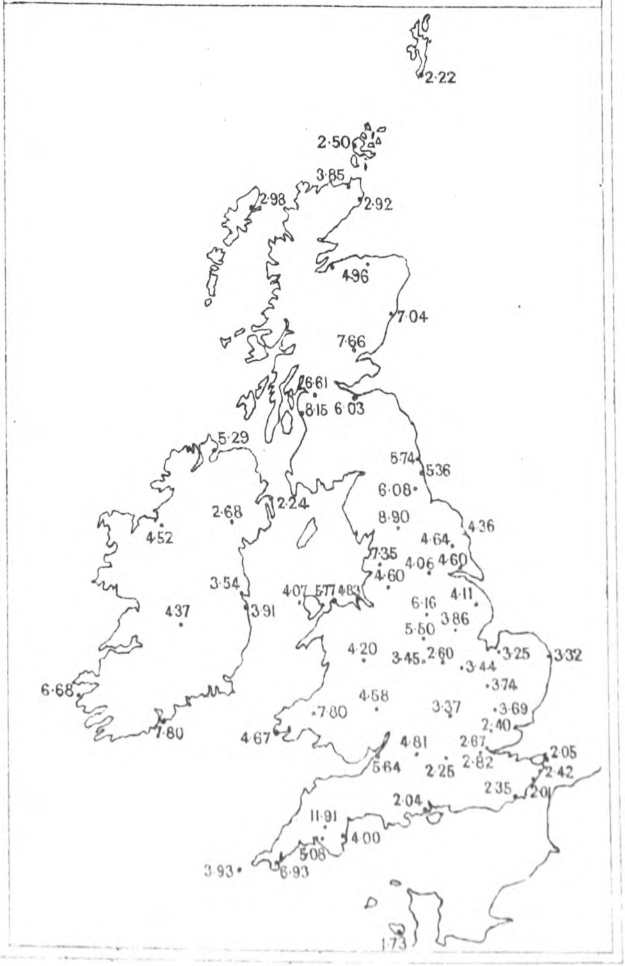
53·2
55°
54°
56°
54·8
57°
56°6
57°
57·7
59°
60°
62°
58°
61°
58·5
61·6
62°
60°
63°
60°
60°
62°
61°
63°

4. RAINFALL


2·22
2·50
3·85
2·98
2·92
4·96
7·04
7·66
6·61
8·15
6·03
5·29
5·74
5·36
6·08
2·68
2·24
8·90
4·52
4·36
4·64
7·35
4·06
4·60
4·60
3·54
4·07
5·77
4·83
4·11
4·37
3·91
6·16
3·86
5·50
4·20
3·45
2·60
3·44
3·25
3·32
3·74
6·68
4·58
3·37
3·69
7·80
2·40
7·80
4·67
4·81
2·67
2·05
5·64
2·25
2·82
2·42
2·35
2·01
2·04
11·91
4·00
5·08
3·93
6·93
1·73

To follow Wind Chart for August.

DANGERFIELD LITH 22 BEDFORD S^T COVENT GARDEN
9514

REMARKS FOR SEPTEMBER 1877.

(*Tables A. to C., September, with Monthly Wind and Weather Charts.*)

Wind.—The month opened with moderate Westerly winds, which, however, soon became light, and variable in direction. At the close of the 2nd a well-defined wind-circulation was set up around a depression which passed across southern England, and in many places it blew a strong gale, but by the close of the 3rd, the direction had become generally Northerly and from thence till the close of the 6th light to moderate winds from between North and West prevailed. An Easterly current then appeared in the Channel and quickly extending to the northern portions of the kingdom, continued to blow till the close of the 10th, when it veered to the Southward. Southerly and South-westerly winds now became general for a few days, and at times blew with considerable strength, but after the 14th they moderated and again veered, at first to West and then to North-west and North, and during most of the remainder of the month light to moderate Northerly winds prevailed. Very light anticyclonic airs were general during the last two or three days, and the month closed with a light Easterly breeze. The accompanying wind chart shows a marked predominance of winds from the northern half of the compass both at the northern and the south-western stations—at the former more particularly from between North and West and at the latter from between North and East, while at the more central stations the percentages are more evenly distributed.

Pressure.—The mean pressure was rather above the average, and, as in August, was very uniformly distributed over the kingdom, especially over England and Ireland, the difference between the values on the Channel coast and those in the north of Scotland being generally less than a tenth of an inch. The maximum readings occurred at Falmouth on the 4th, and at Kew on the 27th, but at the other observatories on the 17th or 18th, an anticyclone lying in each instance over the western portion of the kingdom. The barometer did not fall very low, and the minimum readings were generally observed between the 11th and 14th, during the passage of a depression past our northern coasts; Kew was, however, an exception to this rule, and there the lowest point was reached on the 3rd with depression No. XXXVII. The range of pressure was not large, at Aberdeen it amounted to 1·227 inch and at Kew to only 0·745 inch.

Movements of the Depressions.—One depression, No. XXXVII., passed across southern England early in the month, and later on two others skirted our north-western coasts; but during by far the greater portion of the month systems of high pressure lay over the western part of the United Kingdom, and towards the close of the period covered the whole of Great Britain.

Temperature.—Temperature was again, as in July and August, low in all parts of the kingdom but especially so over the greater portion of England; the mean values ranged from about 56° on the Channel coast to 50° in the north of Scotland. At only a very few stations did the maximum reach 70°, while in London the minimum fell to 30°, and at several other stations nearly as low. Both the maxima and minima occurred at somewhat irregular dates, but in a majority of instances the former were recorded during the continuance of the cyclonic conditions prevailing from the 10th to the 12th, and the latter with the Northerly anticyclonic winds which blew throughout the last week of the month. The range of temperature amounted to 40° in London and to nearly as much at a few other stations, but as a rule it varied between 20° and 30°.

Vapour Tension was greatest in the south-west of England and least in the north-east of England and in Scotland, while *Relative Humidity* was somewhat irregularly distributed, but was on the whole least in the south-west.

Rainfall.—Rainfall was generally less than the average, and both in London and at Chigwell Row amounted to less than an inch. The heaviest daily falls occurred in most instances on the 2nd or 3rd, but at some of the north-western stations not until the 13th or 14th, when they amounted to nearly 2 inches.

TABLE A., SEPTEMBER.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of SEPTEMBER 1877; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).						TEMPERATURE In the Shade (In Degrees Fahrenheit).						HYGROMETRIC VALUES.		RAINFALL (In English Inches).
	Mean for the Month.	Extremes.				Range.	Mean for the Month.	Extremes.				Range.	Tension of Vapour (In English Inches).	Relative Humidity (Saturation = 100).	
		Minimum.		Maximum.				Minimum.		Maximum.					
		Reading.	Date.	Reading.	Date.			Reading.	Date.	Reading.	Date.				
	ins.	ins.	D. H.	ins.	D. H.	ins.	°	°	D. H.	°	D. H.	°	in.	%	ins.
Valencia - -	30·075*	29·391	11th, 1 p.m.	30·474	18th, 1 a.m.	1·083	55·0	42·5	22nd, 6 a.m.	67·0	10th, 4 p.m.	24·5	·349	81	3·476
Armagh - -	·084	·387	13th, 9 p.m.	·537	17th, 9 p.m.	1·150	51·4†	38·0	22nd, 3 a.m.	61·6	13th, 2 p.m.	23·6	·328	86	1·700
Glasgow - -	·037	·311	14th, 1 a.m.	·484	17th, 8 p.m.	1·173	51·0	37·4	8th, 6 a.m.	63·2	11th, Noon	25·8	·297	79	1·406
Aberdeen - -	·026	·266	14th, 4 a.m.	·493	17th, 6 p.m.	1·227	49·9	35·3	9th, 5 a.m.	63·8	14th, Noon	28·5	·289	82	1·875
Falmouth - -	·083	·638	11th, 10 a.m.	·424	4th, 9 p.m. 10 p.m. 11 p.m.	0·786	55·4	43·3	22nd, 5 a.m.	63·3	14th, 3 p.m.	20·0	·355	81	3·685
Stonyhurst - -	·062	·572	12th, 5 a.m.	·481	17th, 10 p.m.	0·909	51·2	37·2	22nd, 6 a.m.	63·9	11th, 11 a.m.	26·7	·306	81	5·148
Kew - -	30·066	29·666	3rd, 5 a.m.	30·411	27th, 10 a.m.	0·745	52·6	34·5	25th, 6 a.m.	69·7	11th, 2 p.m.	35·2	·325	81	0·700

* Means for five days are approximate.

† Mean for one day is approximate.

TABLE B., SEPTEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not

(The Stations are grouped in Districts, and then arranged in order of

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	AIR TEMPERATURE.									
						Means of			Absolute Extremes.			
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°	°	°		°	
0. SCOTLAND, N. -	Sandwick Manse (Orkneys) -	29·993	50·7	48·5	49·6	46·3	53·5	49·9	39·8	30th	59·9	13th
1. SCOTLAND, E. -	Glenalmond - - - -	30·045	50·5	48·8	49·7	42·1	59·5	50·8	32·5	2nd	71·0	24th
2. ENGLAND, N.E. -	Seaham - - - -	30·033	53·4	50·2	51·8	45·8	57·8	51·8	39·3	21st	64·8	5th
	Durham* - - -	30·043	53·9	48·4	51·2	43·9	59·1	51·5	36·3	27th	69·3	11th
	Hull - - - -	30·075	53·3	49·9	51·6	44·3	58·7	51·5	34·0	28th	67·0	11th
	Kelstern 𝔐 - - -	30·071	52·7	47·6	50·2	43·4	58·8	51·1	37·1	25th	67·2	11th
3. ENGLAND, E. -	Hillington 𝔐 - - -	30·049	55·2	48·3	51·8	43·1	62·1	52·6	33·4	27th	71·6	11th
	Audley End 𝔐 - - -	30·080	54·3	48·2	51·3	43·6	61·1	52·4	31·0	25th	70·0	11th
	Chigwell Row - - -	30·102	54·0	51·9	53·0	45·9	59·9	52·9	35·0	27th	69·0	11th
4. MIDLAND COUNTIES.	Wakefield 𝔐 - - -	30·076	52·9	50·3	51·6	44·3	59·6	52·0	32·1	27th	65·8	11th
	Buxton 𝔐 - - -	30·079	50·9	47·5	49·2	42·7	57·0	49·9	33·5	25th	64·1	16th
	Cheadle 𝔐 - - -	30·083	50·7	48·9	49·8	44·2	57·4	50·8	33·8	21st	61·6	28th
	Leicester - - -	30·075	52·7	51·8	52·3	45·3	59·7	52·5	35·4	25th	65·0	12th
	Uppingham - - -	30·069	52·5	48·9	50·7	43·8	59·8	51·8	35·2	25th	64·5	10th
	Oscott - - - -	30·070	51·7	49·6	50·7	44·5	59·2	51·9	36·4	22nd	64·1	12th
	Churchstoke 𝔐 - -	30·094	51·4	48·5	50·0	42·5	58·1	50·3	33·1	22nd	62·7	12th
	Hereford 𝔐 - - -	30·077	52·9	50·4	51·7	44·6	60·0	52·3	34·7	5th	64·9	15th
5. ENGLAND, S. -	Marlborough 𝔐 - -	30·094	53·9	49·3	51·6	43·8	61·1	52·5	33·1	25th	66·5	6th
	Strathfield Turgiss 𝔐 -	30·088	54·0	49·4	51·7	43·3	62·7	53·0	30·7	25th	67·5	6th
	Ramsgate 𝔐 - - -	30·042	56·9	54·2	55·6	50·5	62·0	56·3	44·5	27th	69·0	10th
	Folkestone - - -	30·063	56·4	52·4	54·4	48·2	62·3	55·3	41·1	21st	69·6	11th
	Hastings - - -	30·069	55·6	52·8	54·2	48·5	61·0	54·8	39·3	22nd	68·5	11th
6. SCOTLAND, W. -	—	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND, N.W. -	Hawes 𝔐 - - -	30·089	50·8	46·8	48·8	41·8	56·6	49·2	32·0	27th	63·3	26th
	Prestwich - - -	30·070	52·0	50·5	51·3	44·7	58·1	51·4	34·7	22nd	65·8	11th
	Llandudno 𝔐 - - -	30·075	55·9	52·7	54·3	49·2	60·1	54·7	42·5	8th	68·9	10th
8. ENGLAND, S.W. -	Caermarthen 𝔐 - -	30·071	55·6	50·7	53·2	44·8	62·5	53·7	36·2	23rd	66·8	10th
	Dartmoor 𝔐 - - -	30·093	51·3	48·1	49·7	43·7	56·2	50·0	36·0	22nd	62·0	16th, 26th
	Babbacombe 𝔐 - -	30·084	55·8	52·8	54·3	48·9	60·7	54·8	40·0	5th	67·8	19th
9. IRELAND N. -	Markree Castle - -	30·073	54·2	50·1	52·2	44·1	59·6	51·9	34·3	8th, 22nd	64·4	13th
10. IRELAND, S. -	Dublin - - - -	30·093	53·2	52·2	52·7	48·0	58·7	53·4	38·8	22nd	65·7	13th
	Parsonstown - - -	30·091	54·4	50·2	52·3	44·5	60·3	52·4	31·0	22nd	66·2	11th
CHANNEL - -	Jersey (St. Aubin's) - -	30·102	59·9	56·0	58·0	52·7	63·9	58·3	47·2	23rd	70·0	14th

NOTE.—The stations marked thus 𝔐 are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of SEPTEMBER 1877.
corrected for Diurnal Range.
Latitude, beginning in each case with the Station lying furthest North.)

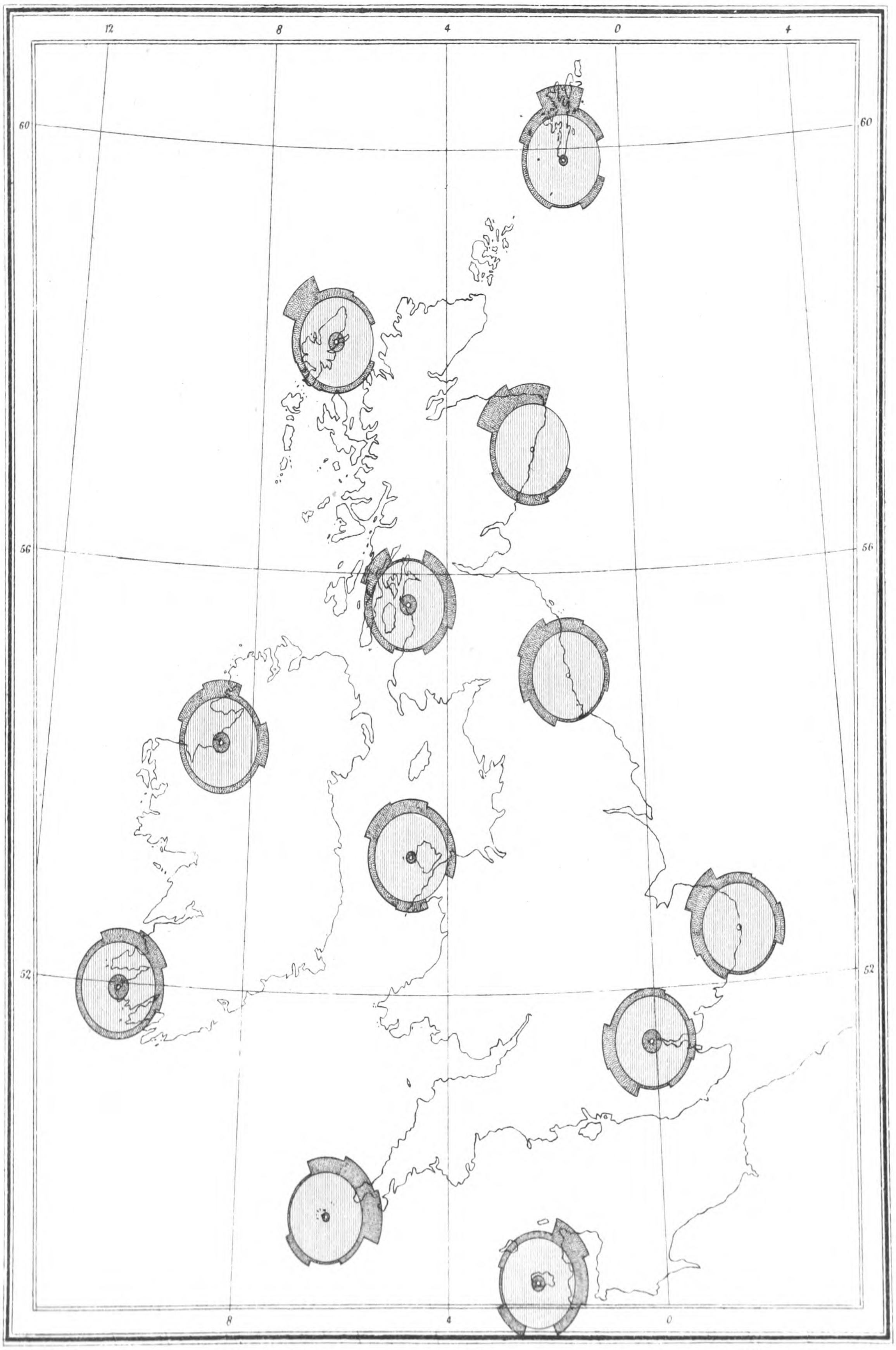
TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10).			RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	°/o	°/o	°/o				ins.	ins.																	
·305	·290	·298	83	85	84	6·4	7·0	6·7	1·630	·260	13th	20	0	1	0	5	13	0	11	2	0	6	3	2	8	24	4
·291	·294	·293	79	85	82	5·2	6·6	5·9	3·030	·830	5th	7	1	0	1	1	8	1	4	1	11	5	0	11	9	15	4
·322	·322	·322	79	89	84	6·7	4·7	5·7	1·968	·600	6th	16	0	1	0	3	10	0	17	4	4	3	3	7	9	5	8
·328	·316	·322	79	92	86	7·6	6·8	7·2	1·834	·549	6th	12	0	0	0	2	15	0	10	8	2	4	8	5	7	15	1
·338	·331	·335	83	93	88	6·5	4·5	5·5	4·020	1·290	2nd	14	0	0	1	7	8	0	3	12	2	3	2	10	3	9	16
·346	·322	·334	87	96	92	6·6	4·0	5·3	4·973	1·742	3rd	16	0	0	1	5	9	0	11	9	5	4	2	8	4	8	9
·371	·329	·350	85	96	91	7·4	4·4	5·9	1·395	·234	3rd	15	0	1	0	1	7	1	10	11	6	2	2	8	3	14	4
·351	·318	·335	84	93	88	6·4	3·5	5·0	1·130	·600	3rd	14	0	1	2	3	7	0	10	12	0	1	0	8	6	14	9
·342	·325	·334	82	84	83	4·1	6·3	5·2	0·640	·430	3rd	5	0	0	0	5	5	0	18	8	9	2	2	8	3	8	2
·315	·321	·318	79	88	83	5·3	5·6	5·5	2·610	·970	2nd	12	0	0	0	3	7	1	8	5	3	1	0	6	8	8	21
·307	·289	·298	82	87	85	6·9	6·1	6·5	3·170	1·040	2nd, 14th	13	0	0	0	0	11	0	5	6	9	5	2	7	6	19	1
·306	·308	·307	83	89	86	6·8	5·3	6·1	2·290	·700	2nd	14	0	0	1	5	11	1	14	11	4	4	4	5	4	11	3
·317	·328	·323	80	85	83	7·8	6·0	6·9	1·560	·530	3rd	12	0	0	0	1	15	1	14	13	2	3	1	7	9	5	6
·342	·321	·332	86	92	89	7·0	5·8	6·4	1·468	·580	3rd	10	0	0	0	4	12	2	14	7	4	3	1	6	5	10	10
·331	·324	·328	86	91	88	7·5	5·3	6·4	2·360	·930	3rd	9	0	0	0	3	14	2	12	12	8	2	5	6	5	8	2
·325	·310	·318	85	90	88	7·0	4·9	6·0	2·344	1·135	2nd	5	0	0	0	2	9	0	3	3	3	7	2	10	8	7	17
·325	·314	·320	81	85	83	6·7	4·5	5·6	2·018	·740	2nd	10	0	0	0	4	6	0	8	1	5	1	3	6	2	3	31
·336	·313	·325	81	89	85	6·9	5·1	6·0	2·954	1·258	3rd	6	0	0	0	6	13	0	9	6	3	0	2	9	2	3	26
·342	·317	·330	82	89	86	7·3	5·0	6·2	1·348	·720	3rd	7	0	0	0	5	12	0	7	3	12	4	1	7	8	15	3
·358	·343	·351	77	81	79	6·1	5·1	5·6	1·389	·495	3rd	12	0	0	0	2	10	1	1	14	2	2	1	11	4	21	4
·363	·345	·354	80	88	84	5·2	4·9	5·1	1·200	·760	3rd	14	0	0	0	6	4	0	22	4	10	2	2	6	6	5	3
·360	·340	·350	81	84	82	5·2	4·7	5·0	1·070	·480	2nd	12	0	0	0	9	8	3	17	21	1	1	2	9	2	5	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·296	·297	·297	80	92	86	7·1	6·2	6·7	4·070	1·700	13th	15	0	1	0	3	13	0	5	4	9	3	1	6	6	4	22
·308	·319	·314	79	87	83	6·7	5·0	5·9	2·654	1·060	14th	12	0	0	2	2	8	0	13	8	4	2	6	0	5	7	15
·355	·342	·349	79	86	82	7·2	5·1	6·1	4·295	1·780	14th	15	0	0	0	5	12	2	7	9	11	4	3	5	17	4	0
·375	·348	·362	85	93	89	6·0	3·9	5·0	3·380	·800	2nd	12	0	0	0	7	7	0	8	1	11	4	0	5	4	2	25
·328	·310	·319	87	92	89	6·9	5·5	6·2	4·500	·920	13th	15	0	0	0	2	9	0	8	3	7	5	9	3	5	11	9
·358	·347	·353	80	86	83	6·5	5·1	5·8	2·430	1·140	2nd	8	0	0	0	5	12	3	9	13	9	1	2	8	4	9	5
·352	·319	·336	84	87	86	7·1	7·0	7·1	1·649	·534	12th	21	0	1	1	3	15	0	13	3	9	7	2	3	3	7	13
·339	·340	·340	83	87	85	6·2	5·1	5·7	1·795	·650	14th	10	0	1	0	1	6	1	8	4	7	7	1	4	9	17	3
·355	·340	·348	84	93	88	7·1	6·8	7·0	2·580	·960	11th	10	0	0	0	1	13	0	7	4	2	5	3	7	3	13	16
·368	·357	·363	71	79	75	5·3	4·2	4·8	1·575	·517	2nd	15	0	0	0	5	6	1	4	20	9	5	1	7	2	5	7

TABLE C., SEPTEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of SEPTEMBER 1877. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

Names of Districts.	Names of Stations.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	Air Temperature.								Tension of Vapour.	Relative Humidity.	Amount of Cloud.	Rainfall.			Weather. No. of Days of							Wind, No. of Observations of								
				Means of			Absolute Extremes.																									
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
		ins.	°	°	°	°	°		°		in.	%		ins.	ins.																	
0. SCOTLAND, N.	Sumburgh Head	29·940	49·3	44·8	54·2	49·5	39	24th	59	14th	0·304	87	6·8	1·79	0·32	4th	25	0	0	0	5	10	1	13	3	0	3	1	2	2	5	1
	Thurso - -	29·975	50·3	45·6	57·6	51·6	35	9th	64	11th	·316	87	6·9	1·96	0·29	1st	24	0	0	0	5	14	0	6	1	0	1	3	4	5	9	1
	Wick - -	29·984	50·2	42·3	55·9	49·1	33	9th, 24th	60	12th, 13th, 14th, 27th, 28th.	·317	88	6·8	1·38	0·23	13th	19	0	0	0	6	13	1	3	1	0	2	3	2	4	15	0
	Stornoway -	30·008	49·3	43·1	54·8	49·0	34	9th	59	27th	·321	92	7·1	1·66	0·36	13th	22	0	0	0	5	16	0	3	2	0	2	2	3	4	11	3
1. SCOTLAND, E.	Nairn - -	30·007	49·4	44·4	57·0	50·7	36	9th	63	11th	·283	81	6·6	1·50	0·59	5th	16	0	1	0	6	13	0	2	0	0	2	1	2	3	8	12
	Aberdeen -	29·988	50·5	45·4	56·8	51·1	38	3rd	65	14th	·297	81	3·8	1·83	0·54	5th	15	0	0	0	16	4	2	8	0	0	2	4	3	2	11	0
	Leith - -	30·021	50·6	45·4	61·8	53·6	38	9th	69	16th, 19th	·301	81	4·7	1·18	0·35	12th	9	0	0	1	7	3	0	5	1	1	3	0	3	14	3	0
2. ENGLAND, N.E.	Shields - -	30·044	50·9	47·1	57·0	52·1	40	22nd	63	12th, 14th	·300	81	6·6	1·72	0·43	20th	15	0	0	0	6	11	4	5	4	2	1	1	3	6	8	0
	Scarborough -	30·046	52·1	48·6	56·6	52·6	41	25th	63	12th	·329	84	6·4	4·35	1·12	14th	18	0	1	0	6	10	1	9	2	3	2	0	4	4	6	0
	York - -	30·061	50·1	44·0	60·1	52·1	35	25th	67	11th	·316	87	5·4	3·12	1·11	14th	15	0	0	0	12	12	1	6	3	3	1	4	2	3	8	0
3. ENGLAND, E.	Yarmouth -	30·032	53·7	48·3	59·1	53·7	40	5th, 27th	68	14th	·348	84	4·0	2·54	0·67	3rd	17	0	0	1	11	1	2	4	3	4	1	1	3	5	9	0
	Cambridge -	30·063	51·1	44·5	62·6	53·6	32	28th	71	11th	·337	89	6·8	1·72	1·23	3rd	14	0	0	2	5	12	0	10	5	1	1	0	7	1	5	0
4. MIDLAND COUNTIES.	Nottingham -	30·081	50·7	43·6	62·3	53·0	34	25th	70	14th	·321	87	6·6	1·89	0·52	3rd	13	0	0	0	7	12	0	7	3	1	1	2	4	1	7	4
	Oxford - -	30·070	50·4	45·2	59·9	52·6	35	25th	67	14th	·318	87	7·3	2·36	1·60	3rd	9	0	0	0	7	20	0	6	4	1	1	0	3	3	1	11
5. ENGLAND, S.	London - -	30·069	51·8	45·4	62·6	54·0	30	28th	70	11th, 12th	·328	85	6·8	0·81	0·32	3rd	10	0	0	0	6	15	0	3	2	3	2	1	5	6	3	5
	Dover - -	30·053	55·3	51·9	60·3	56·1	42	25th	65	2nd, 15th	·346	79	4·2	1·70	0·43	3rd	10	0	1	0	12	3	0	9	3	4	1	1	4	5	3	0
	Hurst Castle -	30·071	54·5	48·3	60·7	54·5	39	22nd	66	15th, 16th	·381	90	4·9	1·60	0·82	2nd	7	0	0	1	14	11	0	7	12	2	0	1	1	3	4	0
6. SCOTLAND, W. -	Ardrossan -	30·043	51·1	46·5	59·5	53·0	38	4th	64	10th	·308	81	5·5	1·76	0·55	11th	8	0	0	0	10	8	2	1	5	5	3	1	2	3	7	3
7. ENGLAND, N.W.	Liverpool -	30·064	51·6	48·6	58·2	53·4	42	21st, 22nd	64	13th	·325	85	7·1	2·97	1·24	2nd	12	0	0	0	4	13	1	4	4	5	3	4	2	4	3	1
	Holyhead -	30·065	53·3	50·8	58·7	54·8	46	8th, 22nd	63	10th	·346	85	5·8	4·22	1·78	14th	12	0	0	1	7	8	1	5	4	4	0	4	3	3	6	1
8. ENGLAND, S.W.	Pembroke -	30·067	54·0	50·7	58·8	54·8	44	22nd	63	7th	·344	82	5·0	2·55	0·72	2nd	12	0	0	0	10	5	4	3	9	4	3	0	2	3	5	1
	Portishead -	30·070	51·7	46·4	62·6	54·5	40	5th	70	10th	·344	89	6·5	2·74	0·85	2nd	7	0	0	0	6	11	3	9	3	2	0	1	3	5	4	3
	Plymouth -	30·074	53·0	48·4	61·6	55·0	39	5th	66	15th, 19th	·363	90	4·7	2·40	0·64	2nd	11	0	0	0	11	9	1	1	7	4	2	2	3	2	2	7
9. IRELAND, N.	Greencastle -	30·047	52·0	46·5	58·9	52·7	38	4th	64	17th	·340	87	7·6	2·81	0·89	11th	18	0	0	0	4	18	0	7	5	2	1	3	3	4	5	0
	Donaghadee -	30·063	52·0	48·7	57·4	53·1	40	2nd	62	5th, 13th	·353	91	5·3	1·40	0·38	11th	11	0	0	0	9	8	1	3	6	2	3	1	3	8	4	0
10. IRELAND, S.	Kingstown -	30·077	53·0	48·9	58·0	53·5	?39	22nd	65	13th	·330	82	5·8	2·00	0·74	10th	8	0	0	0	6	8	1	4	3	2	2	3	1	6	7	2
	Valencia -	30·083	54·1	49·0	61·2	55·1	40	22nd	67	16th	·350	83	5·5	3·37	1·14	14th	14	0	0	1	7	9	1	5	6	4	2	2	2	2	2	5
	Roche's Point -	30·081	53·0	48·8	60·1	54·5	44	22nd	64	7th, 16th, 17th.	·337	84	5·2	3·77	0·77	10th	8	0	0	0	10	7	2	11	6	3	3	1	1	3	2	0
CHANNEL - -	Scilly - -	30·078	57·7	54·4	60·4	57·4	51	22nd	64	11th, 12th, 14th.	·389	82	7·3	3·06	0·87	2nd	16	0	0	0	3	15	4	5	7	9	2	1	3	1	1	1

MONTHLY WIND CHART FOR SEPTEMBER 1877.

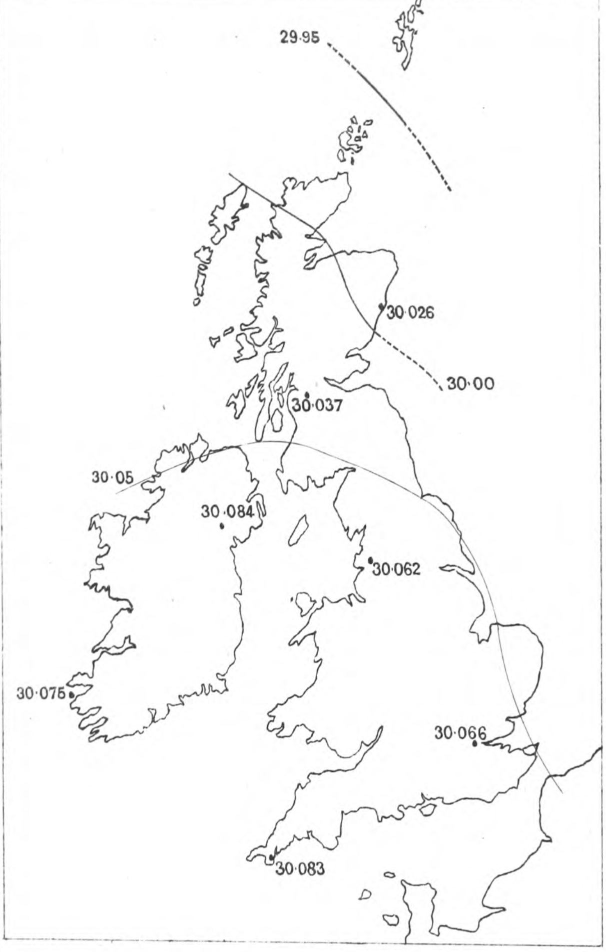

12
8
4
0
4
60
60
56
56
52
52
8
4
0

To face p. 112.

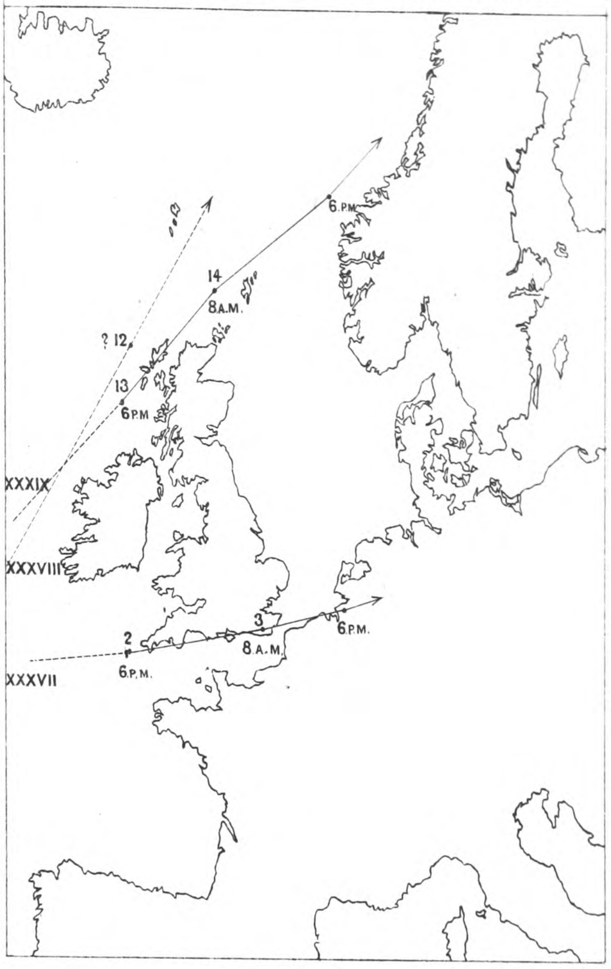
DANGERFIELD LITH 22 BEDFORD ST COVENT GARDEN.

MONTHLY WEATHER CHART, SEPTEMBER, 1877.

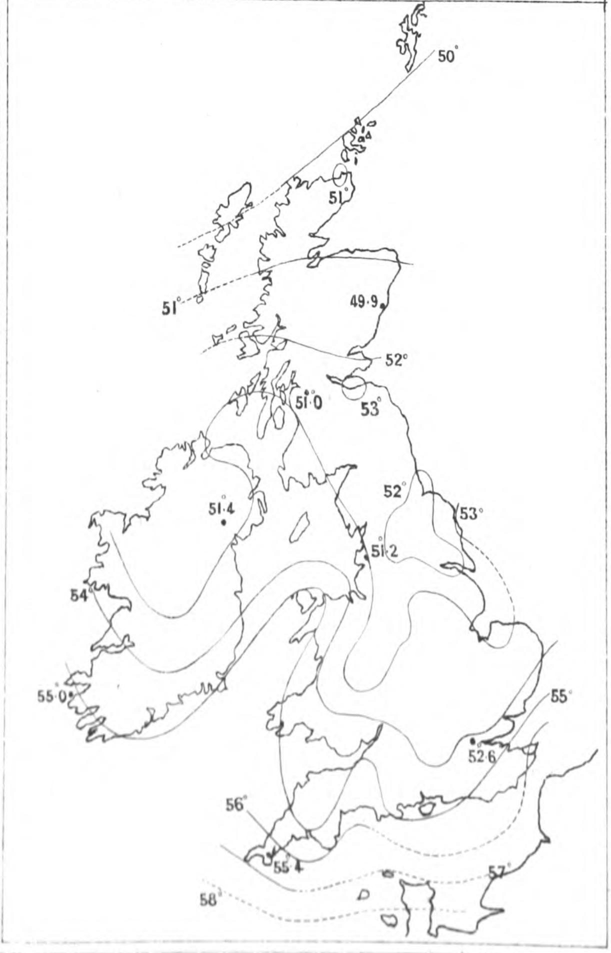
1. DISTRIBUTION OF MEAN PRESSURE


29·95
30·026
30·00
30·037
30·05
30·084
30·062
30·075
30·066
30·083

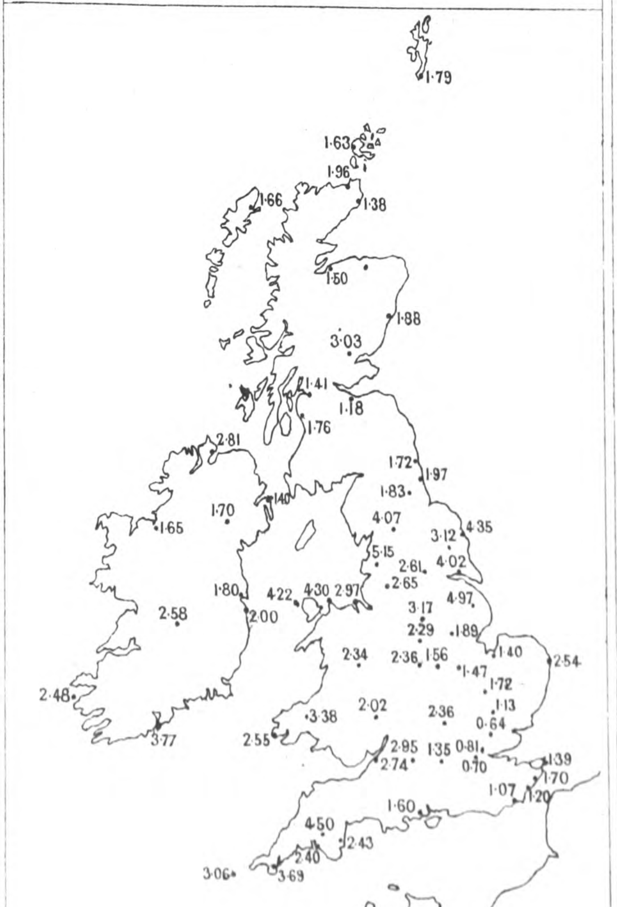
2. MOVEMENTS OF DEPRESSIONS.


6.P.M.
14
8.A.M.
? 12
13
6.P.M.
XXXIX
XXXVIII
3
2
8.A.M.
6.P.M.
6.P.M.
XXXVII

3. DISTRIBUTION OF MEAN TEMPERATURE.


50°
51°
51°
49·9
52°
51·0
53°
52°
53°
51·4
51·2
54°
55·0
55°
52·6
56°
55·4
57°
58°

4. RAINFALL


1·79
1·63
1·96
1·66
1·38
1·50
1·88
3·03
1·41
1·18
1·76
2·81
1·72
1·97
1·83
1·70
1·40
1·65
4·07
3·12
4·35
5·15
2·61
4·02
2·65
1·80
4·22
4·30
2·97
3·17
4·97
2·58
2·00
2·29
1·89
2·34
2·36
1·56
1·40
2·54
1·47
1·72
2·48
1·13
2·02
2·36
3·38
0·64
3·77
2·55
2·95
1·35
0·81
2·74
0·70
1·39
1·70
1·07
1·20
1·60
4·50
2·43
2·40
3·06
3·69
1·58

To follow Wind Chart for September.

Dangerfield Lith 22 Bedford St Covent Garden

PART IV.

SECTION I.

GENERAL SUMMARY FOR THE QUARTER.

Throughout the closing months of the year the weather was more than ordinarily unsettled, depressions—some of which were unusually deep—following each other in rapid succession during the greater part of the period. As a rule, these systems travelled along a northerly or north-easterly path, their centres in many instances keeping to the westward of our coasts, whilst in others they only touched the northern portions of the kingdom. Two cases occurred in which the centres moved in a south-easterly direction, past our eastern coasts, and one or two others in which they crossed over central and southern England to the Continent. Westerly winds largely predominated, and upon the whole temperature was somewhat above the average. The barometer was very unsteady, and the readings covered a wide range; but while in November the mean pressure was very low, in October and December it did not vary greatly from the normal.

October 1st–9th.—The anticyclonic conditions which had established themselves over western Europe at the close of September continued during the opening days of October. On the morning of the 1st a broad band of uniformly high pressure was observed, extending across Great Britain and the central portion of the Continent, and consequently calm, quiet weather, with a somewhat low temperature, prevailed over the whole of the British Isles. A decrease of pressure took place on the following day, due apparently to the proximity of a depression which was then passing along our north-western coasts, but the movement of the mercury was only slight, and was soon followed by a rise, which began on the 3rd and continued without interruption till the 6th. During this interval a large anticyclonic system became developed over the northern portion of the Continent, from whence it moved south-westwards towards Denmark and the north of Germany. On the 6th a depression began to show itself on the Norwegian coast, and upon its approach the area of high pressure shifted quickly to the westward, while readings gave way rapidly over Scandinavia, and to a less extent at most of the British stations also. With this change in the distribution of pressure the wind veered to West and North, and at some of our northern stations, as well as in Scandinavia, it reached the force of a gale. By the close of the 8th the depression had passed away over Lapland, and gradients had again become slight. On the 9th a fresh and more serious fall of the barometer commenced, but the highest readings were then found to the south-west of the British Isles, and the winds had backed and become generally light from West. Throughout the whole interval the weather was rather cold, but generally fine, with a good deal of fog in places. On the morning of the 7th the thermometer over central England was 17° lower than it was at Wick, and 5° lower than in Lapland; and again on the 9th a higher temperature was reported from Wick than from any other station in western Europe.

October 10th–16th.—The weather now became very unsettled, under the influence of a series of depressions which advanced upon the northern portion of the kingdom, and which culminated in the very deep system observed on the 15th. The fall of the barometer noticed on the 9th continued throughout the following day, and preceded the arrival of a large depression, whose centre reached the Norwegian coast on the morning of the 11th. The track of this system was, however, too far to the northward for it to greatly affect the weather over the British Isles. Only a slight recovery of pressure ensued, and on the 12th a fresh decrease set in over Ireland, and soon extended to the rest of the kingdom. This was followed by the arrival of a second disturbance, the centre of which on the morning of the 13th was in the neighbourhood of our northern coasts, from whence it travelled to the coast of Norway. After the passage of this depression the barometer rose a little in the north, where the previous fall had been more rapid than elsewhere, but in the south-west readings continued to decrease uninterruptedly till the close of the 14th. At that time the very deep disturbance No. XLII. reached us, and travelled across our north-western coasts, bringing with it a very heavy fall of rain and exceptionally strong Southerly winds, which veered to West and North-west as the centre passed away. A subsidiary depression passed across the north of Ireland and England during the latter part of the 15th, and caused the barometer in those districts to fall again briskly for a short time (see Plate LVIII.); but this check to the general recovery of pressure was of brief duration, and the rise then continued throughout the 16th.

Temperature rose everywhere upon the approach of this disturbance, and at Glasgow a sudden rise of 10° occurred early on the 13th. The subsequent veering of the wind was, however, accompanied by a general and very considerable fall of the thermometer, at first very sudden at many stations, but continuing at most until the 16th. These movements are well shown on Plate LVIII., as is also a curious sudden fall of temperature, and equally sudden recovery shortly after, which occurred at Aberdeen early on the 14th, accompanying a temporary shift of wind from South to North and back again. At the close of the 16th pressure was high on our south-west coast and over the Bay of Biscay, and gradients for light North-westerly winds had become established.

October 17th–20th.—During this interval more settled weather prevailed, an anticyclone, in which readings of 30·5 inches were observed, having become developed to the south-west of our Islands, from whence it moved eastwards to France, and then in a south-easterly direction to the Mediterranean. Over the British Isles this movement was accompanied by light Westerly winds, backing to South-west and South; while over the greater part of France a light Easterly current prevailed. The weather was generally fine, although during the last day or two rain fell at our western and northern stations; temperature was at first low, but rose somewhat as the wind backed. At the close of the 20th the barometer, which had been slowly giving way since the 18th, began to fall more rapidly.

October 21st–31st.—Throughout the whole of this period the highest pressures remained over southern Europe, whilst a series of depressions followed each other in quick succession past, or over, our Islands. The approach of the first of these was indicated by the accelerated fall of the barometer in the south-west on the 20th, and on the following morning its centre had advanced to the west of Scotland. It was accompanied by a very general fall of rain, and by strong South-westerly winds, which in the west reached the force of a hard gale. Only a very slight and temporary recovery of pressure ensued, and on the 22nd another low-pressure centre was observed off our north-western coasts, but unaccompanied by any serious fall of the barometer or increase of wind. The third depression of the series arrived on the 23rd, and taking a more easterly route, to the southward of the track of its predecessors, travelled across Ireland and the northern counties of England; the barometer fell generally, although more at the English stations than elsewhere, but by the close of the day a fresh rise was in progress.

On the morning of the 24th the last-mentioned system had reached the south of Norway, and was moving slowly to the north-eastward. Over the British Isles the wind was Westerly, moderate in England and Ireland, and light over Scotland. A fresh fall of the barometer had then begun in the south-west, and in a very short time it became general except in the north of Scotland. A shallow subsidiary depression reached us early on the morning of the 25th, its centre lying at 8 a.m. over the Saint George's and English Channels, while a ridge of higher readings separated it from the previous depression, which was still observed over Norway; during the day this disturbance passed across the country to the Continent, and a recovery of pressure set in and continued till the 26th. Another depression was, however, approaching from the Atlantic, and readings soon gave way again, particularly at the northern and western stations. At 8 a.m. on the 27th the centre of this disturbance, No. XLV., lay not far from the Hebrides, and a fresh gale was blowing in the north of Scotland, while gradients had become steep over the whole kingdom. The general distribution of pressure was, however, becoming somewhat modified, and a second area of high readings was showing itself over Scandinavia and Lapland. Under these conditions both this disturbance and another which followed it on the 29th, pursued a more northerly course, and disappeared over the ocean to the northward. The barometer continued very unsteady over Great Britain, with strong Southerly winds, which in places attained the force of a gale. The last depression of this long series reached us on the 30th. It was preceded by a rapid, but brief, fall of the barometer, a general recovery of pressure being again in progress by the close of the day. The centre of this system travelled eastwards to the Baltic, the higher readings over Lapland giving way before it, while the area of high pressure in the south of Europe developed itself over the Peninsula and the Bay of Biscay. The barometer continued to rise throughout the 31st, at the close of which day gradients for Westerly winds had become general over the greater part of western Europe, with fine weather over Great Britain.

November 1st–3rd.—On the morning of the 1st the last-mentioned depression still lay over the Baltic, where it appeared to be slowly filling up, while readings of over 30·5 inches were reported from the south-west of England and west of France. A fresh gale was blowing in the southern Baltic, but light or moderate Westerly winds, with fine weather, were general over the British Isles.

During the day the anticyclone moved eastwards across France, the barometer falling over that country as well as over the whole of our Islands, while it rose rapidly in Denmark and over southern Scandinavia. This change in the distribution of pressure was concurrent with the passage of a large depression which skirted our north-western coasts, travelling in a north-easterly direction towards Norway; in the Hebrides the wind rose to a gale, but over the rest of the kingdom it continued moderate or light, the direction varying from South-west on the western coasts to South-east at the mouth of the Channel, and to East in the south of France. The barometer rose again during the latter part of the 2nd, and continued to do so for several hours, a new area of moderately high readings being observed in the south-west on the 3rd, but at the close of that day pressure was again giving way and the wind had backed to South.

November 4th–8th.—Another period of unsettled weather now ensued, and the several disturbances which followed each other at brief intervals kept the barometer very unsteady. On the morning of the 4th the highest pressure lay over south-eastern and central Europe, and gradients for Southerly winds had become established over Great Britain; in the north and west they were rather steep, but were less so in the south and east. By the evening a large depression had reached the Hebrides, and at the southern stations the wind had veered to South-west and West, but without any very considerable increase of strength. The disturbance travelled towards the Norwegian coast during the night, and a general, but not very rapid, rise of the barometer ensued. Before the close of the 5th, however, it was again falling, and during the night a fresh depression passed us to the northward of Scotland and was followed by another during the night of the 6th. The decrease of pressure which accompanied these systems was only slight in the south-east of England, but in Scotland it was brisk and low readings were recorded, while a good deal of rain fell over the kingdom generally. On the 7th a general recovery of pressure began and continued till the 8th, by which time gradients had become slight, with generally fine and cool weather; conditions were, however, by no means settled, and the barometer fell again during the latter half of the day, while in the west the wind increased to a fresh gale.

November 9th–13th.—The barometer continued to fall without interruption till the 10th, a deep depression meanwhile skirting our north-western coasts early on the 9th. A still deeper one arrived on the 10th, when readings in the north of Scotland fell to 28·8 inches, and the wind blew very strongly from the South and South-west in all parts of the kingdom. A slight and very temporary recovery of pressure ensued, but early on the 11th it was decreasing again with the approach towards our western coasts of depression No. L. Strong Southerly winds were then blowing all over the country, and in the south of Ireland they had reached the force of a hard gale; later in the day they increased generally, and a heavy gale, accompanied by torrents of rain, blew till nearly midnight. This depression was unusually deep, the barometer falling as low as 27·86 inches at Stornoway. In the south-west of Ireland the barometer rose early in the afternoon, and by midnight of the 11th the rise had become general. This movement was, however, temporarily checked soon afterwards, apparently by the arrival of a subsidiary system, following closely upon the main disturbance, under the influence of which the wind, which had subsided very much, again rose to a hard gale in the Hebrides. By the close of the 12th this was passing away, and a rapid and general rise of the barometer was again in progress. Next day gradients had become slight and the weather quiet and tolerably fine, although it was still in an unsettled condition. For some days past the highest pressures had been found over north-eastern Europe, but an area of relatively high readings was now becoming developed over France and the Peninsula.

November 14th–18th.—The area of high pressure in the south now developed very quickly, at the same time that the very high readings over eastern Europe gave way somewhat, so that by the 16th a broad band of high and tolerably uniform readings extended right across the Continent, embracing at the close of the day the Channel and the southern portion of the British Isles. While this change was taking place, a couple of depressions passed over or near the northern portion of the kingdom,—one at the close of the 14th, and another 24 hours later; both caused pressure to give way quickly in Scotland, although in the south of England it was but slightly affected. The latter disturbance caused a gale to blow over northern England and Scotland, which attained very great strength in the extreme north, where it was described as of unprecedented severity, the remarkably high velocity of 83 miles per hour being recorded by the anemometer at Sandwick. Both systems travelled in a rather more easterly direction than those which had immediately preceded them, and on the morning of the 17th the centre of the second was observed over Lapland. After the passage of that depression the barometer rose rapidly at those stations where it had previously fallen, but on the 17th a fresh general fall set in, and a new disturbance passed at some distance to the northward of our Islands, although sufficiently near to cause a fresh gale to blow in parts of Scotland. At the close of the 18th the general distribution of pressure had not materially altered from that which had prevailed for the past few days, but it was evident that another depression was approaching our western coasts. The wind was then generally Westerly and moderate, but in the extreme north it was fresh or strong; the weather was fine over the greater part of the kingdom.

November 19th–23rd.—On the morning of the 19th a large area of low pressure lay to the northward of our Islands, and on all our coasts the barometer was still falling briskly. During the day a subsidiary depression crossed the northern portion of the kingdom, and in its rear the wind veered to North-west, and in places to North, but without increasing much in force. The system was observed next moving over the North Sea, and strong Southerly and Easterly winds were then reported from Denmark and Scandanavia, while later in the day North-westerly winds became general over Great Britain. The quick recovery of pressure which ensued upon the passage of this disturbance was short-lived, and late on the 20th a new and rapid decrease set in in the south-west of Ireland, and extended in a few hours to all our coasts. It preceded a deep depression which reached the neighbourhood of the Hebrides early on the 22nd, and lay near the Shetlands at 8 a.m., and which was accompanied by a very general and sharp gale, and by heavy falls of rain. Although the barometer began to rise at Valencia soon after mid-day on the 22nd, the movement did not become general till some hours later, when it rose very rapidly in the north, with the result that gradients soon became far less steep. At the close of the 23rd the centre of the disturbance was lying over Sweden, and moderate winds with fine weather were general over Great Britain; the barometer, however, had then begun to fall again at Valencia, although elsewhere the rise was still going on.

November 24th–30th.—The general distribution of pressure had now become considerably changed. The highest readings were in the south of France, and the depression which had affected Scotland on the 22nd had reached the Baltic, and was separated from a large area of low pressure, lying to the south-west of our Islands, by a ridge of relatively high readings, which stretched in a north-westerly direction from the Continent across the North Sea and Great Britain. In the south-west of England the barometer was falling very rapidly, while at Aberdeen it was steady. The centre of a new disturbance reached the mouth of the English Channel in the evening, and travelled eastwards to the Continent during the night, heavy Easterly gales accompanying it over southern England, and Westerly gales on the French coasts of the Channel, with very heavy rain. At 8 a.m. on the 25th the centre of the depression was observed over northern Germany, and pressure was once more rising generally over Great Britain, the rise being rapid in the south. The maximum readings were then found to the south-west of our Islands, and North-westerly and Northerly winds with fine weather had become general. The improvement was, however, very transitory, and on the 26th the mercury was again falling quickly, in front of a deep depression which reached our northern coasts during the ensuing night. Throughout the next two or three days the barometer continued very low, the highest pressures remaining over southern Europe, while an area of very low readings kept to the north-west of our Islands. During the night of the 28th a fresh depression arrived, the centre of which was shown over Scotland at 8 a.m. on the 29th. Its approach was preceded by a further brisk fall of the barometer, and was accompanied by a considerable and general increase of wind, the direction of which at 8 a.m. was Westerly in Ireland, Southerly over England, and Easterly in the extreme north of Scotland; later in the day, however, Westerly winds became very general. The centre of the depression appeared to keep near our northern coasts until the 30th, when it moved south-eastwards, and the wind became Easterly again in Scotland and the north-east of England. A subsidiary disturbance appeared in the south-west on the 30th, and caused a fresh increase of wind-force there, but by midnight the barometer was rising rapidly all over the kingdom. Throughout this interval a great deal of rain fell, but temperature remained nearly normal.

December 1st–5th.—The small area of low pressure which reached us at the close of the 30th now became merged in the main depression moving south-eastwards from Scotland, and the combined systems continued to move across France to the Mediterranean. The increase of pressure proceeded rapidly over the greater part of western Europe, and resulted in an area of high pressure becoming developed over Scandinavia and the British Isles, the lowest readings being then found over the Mediterranean. On our coasts the rise of the barometer ceased on the 3rd, and was followed by a steady fall which became very rapid towards the close of the 5th. Up to that time the wind had continued light from the Eastward, but in the west it now veered and increased very much in force. In the south of Ireland it rose to a gale, with every indication of the near approach of a new depression. During the first part of this period the weather was dull, but during the last day or two rain fell pretty generally, though not heavily.

December 6th–12th.—The rapid decrease of pressure just mentioned preceded the arrival of a rather deep depression, No. LV., the centre of which travelled along our north-western littoral on the 6th. It was accompanied by strong winds and gales from the Southward, veering to West, with a very general rise of temperature, and heavy rain. The region of highest pressure had by that time shifted to eastern Europe, but during the next two days it extended to France and the Peninsula. With this change of distribution the barometer rose again over the British Isles, rapidly at first, as the depression passed away, and then more slowly till the close of the 8th, by which time a large area of high readings covered southern England, France, and the Bay of Biscay, and light or moderate Westerly winds blew generally over the United Kingdom. The passage of a depression in the vicinity of our western coasts now caused a fresh fall in the barometer, which, however, was considerable only in the west, and was scarcely felt at all in the north-east of Scotland. But the general distribution of pressure became modified, and the area of high readings shifted north-eastwards to Germany, and thence to Russia, while our winds backed to South, and on the 9th blew strongly at the western stations; in France Easterly winds prevailed with cold weather. A rise of the barometer at the western stations on the 10th was followed next day by a fresh general fall, and early on the 12th a new disturbance crossed the northern half of the kingdom, and a fresh gale was experienced very generally. At 8 a.m. the centre lay over the eastern part of Scotland, and while the winds in the British Isles were generally Westerly and strong, a South-easterly gale was blowing in Norway. During the day the depression crossed the North Sea, the barometer rose, and the wind moderated.

December 13th–23rd.—Although a large area of low pressure lay to the northward of Great Britain on the morning of the 13th, gradients were not steep, and the Westerly wind was moderate in force, with a rising barometer and improving weather. A new area of high pressure had become developed over southern France, which during the day extended itself north-westwards, and a large area of high readings, in which the barometer rose to above 30·6 inches, soon became established over north-western France and the Bay of Biscay. On the 15th, and again on the 17th, disturbances reached our northern coasts and travelled in a south-easterly direction to Germany. But for several days the changes of pressure were not important, the high pressure gradually extending itself northwards and eastwards, over Great Britain and the Continent, until it stretched in a broad band from our western coasts to eastern Russia, with areas of relatively low pressure over the ocean to the northward of our Islands, and in the south over the Mediterranean. On the 20th the barometer gave way again generally, the fall becoming brisk during the night of the 21st. It was caused by the advance of a large depression, whose centre, passing to the northward of Scotland at the close of the 22nd, was observed over Norway on the morning of the 23rd. Under its influence the wind rose generally in force, and while on all our coasts it blew strongly from the Westward, it increased to a gale in the east and north of Scotland. When the depression had passed, the wind veered very generally to North-west, with colder weather, while the barometer rose again briskly for a few hours, and the highest readings once more appeared to the south-west of our Islands. The rise was, however very brief, and at the close of the 23rd a fresh fall was in progress all over the kingdom.

For several days Easterly winds, with very cold weather, had prevailed over the greater part of France, and on the morning of the 22nd the thermometer at Rochefort was 22° lower than in Scotland and 8° below that at Haparanda, in Lapland. This cold current had, however, now given way, and a considerable rise of temperature took place over France and Germany, at the same time that the thermometer fell over Great Britain. The weather throughout this interval, though generally dull, was upon the whole dry.

December 24th–31st.—The closing days of the month were characterized by an unsteady barometer and unsettled weather. On the 24th the high-pressure area moved southwards and became dispersed over the Peninsula, and although the barometer remained relatively high in that region, it did not again rise much above 30 inches until the last two or three days of the month. At 8 a.m. on the 24th the centre of a new depression was observed off the east coast of Scotland, and a northerly or north-westerly gale was blowing over the northern portion of Great Britain. The disturbance moved slowly eastwards to the Sound, and was afterwards joined by a still deeper one which reached us on the morning of the 26th. The combined systems formed a large area of low pressure, which spread itself out over the North Sea, Denmark, and southern Scandinavia, and eventually disappeared over the Baltic on the 28th. Meanwhile the barometer rose over the British Isles, with North-westerly winds and cold and finer weather. On the 28th, however, a fresh fall began and continued till the following day, when a large and deep depression reached our western coasts, accompanied by strong Southerly winds and by a rapid rise of temperature, and warmer unsettled weather became general. This system passed along our northern coasts, but for some time afterwards the recovery of pressure was only slight. A fresh fall occurred at the English stations on the 30th, caused by a small secondary depression whose centre lay over central England at 6 p.m., when Northerly winds were blowing in Ireland and Saint George's Channel, and Southerly winds on the eastern coasts. The depression became more marked during its progress and was observed over the Netherlands on the 31st. In its rear the barometer rose briskly all over the kingdom, and a new area of high pressure became developed over the Bay of Biscay, the western French coasts, and the Channel. With these conditions moderate North-westerly or Westerly winds blew generally over the British Isles, temperature fell very considerably, and the year closed with cold bright weather.

SECTION II.

TABLE OF CYCLONIC SYSTEMS.—OCTOBER, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XL. October 10-12.	No. XLI. October 13.	No. XLII. October 14-16.
Form	Uncertain	Not known	Elliptical
Size	Very large	Large	Very large
Depth	Deep	Moderate	Very deep
Where first Observed	To the north of Scotland	To the north-west of the Hebrides	Off the west of Ireland
Direction of Motion	North-easterly	North-easterly	North-easterly
Rate of Motion	Very slow	Slow	Slow
Regions passed over by Steepest Gradients.	Scotland and the south of Norway	Ireland, the north of England, and Scotland.	United Kingdom
Termination	Passed away to the northward of Norway.	Disappeared to the northward	Travelled to the north of Europe
Time under Observation	Two days	About half a day	Two and a half days
Accompanying Winds	Westerly to North-westerly over the British Isles; South-westerly to Southerly in Scandinavia and the Baltic.	South-westerly, strong	Southerly, veering to West and North-west. Strong gales were experienced very generally.
„ Weather	Very unsettled in the northern portion of the kingdom, with sleet, hail, and snow in places.	Dull generally, with rain in Scotland and the north of Ireland.	Dull and squally
„ Rainfall	Not very heavy	Slight	General in the British Isles, and very heavy in the north and west.
REMARKS	The centre of this system kept entirely to the northward of these islands, and therefore its features cannot be very minutely described.	As in the preceding case, no precise information can be given as to the form of this depression, its track lying outside our north-western coasts.	The centre of this system seems to have passed along our western and northern coasts, and then skirted the coast of Norway. The centre of a secondary disturbance passed over the north of Ireland and England some 15 hours after the primary had passed, and caused a fall of the barometer at Armagh and Stonyhurst, which is well shown on Plate LVIII.

TABLE OF CYCLONIC SYSTEMS.—OCTOBER, 1877.

No. XLIII. October 20-23.	No. XLIV. October 23-25.	No. XLV. October 26-28.	No. XLVI. October 29-30.
Probably oval	Irregular	Probably oval	Uncertain.
Large	Large	Large	Large.
Moderate	Moderate	Moderate	Moderate.
West of Ireland	North-west of Ireland	West of the Hebrides	Off the west coast of Scotland.
North-easterly	Easterly at first, then north-easterly	Northerly	Northerly.
Slow	Moderate	Very slow	Moderate.
North-western portion of the British Isles.	England	Northern portion of the British Isles and the North Sea.	England.
Disappeared over Lapland	Travelled away to the north of Europe	Disappeared to the northward of our Islands.	Moved away to the northward.
Three days	Two days	About 38 hours	One day.
Southerly to South-westerly and Westerly; strong to a gale.	Southerly in the east, Westerly in the west, and Northerly in Scotland; moderate.	Southerly in the east and north, Westerly in the west and south-west; strong generally, with gales in Scotland.	Strong Southerly winds and gales over Great Britain.
Unsettled, dull, and rainy	Cloudy or dull, with bright intervals	Cloudy and unsettled, with thunder and lightning in places.	Dull, wet, and very unsettled, generally.
Very general and heavy in the south of Ireland.	Very general, but heavy only in the north-west.	Very general, but not heavy	General, and in many parts very heavy, especially in the west.
When this depression reached us, pressure was high upon the Continent, where it formed a barrier to the eastward progress of the centre, which in consequence only skirted our coasts. The depression was the first of a series which succeeded each other at very short intervals during the remainder of the month.	This depression passed across Ireland and the north of England, and was apparently subsidiary to the more important disturbance No. XLIII.	This depression was preceded by one which crossed over England to the Continent, but which was unaccompanied by strong winds. The centre of the present system kept to the westward of the Hebrides.	This was another depression which skirted our northern coasts, its further eastern progress being opposed by the high pressure over Scandinavia.

TABLE OF CYCLONIC SYSTEMS.—NOVEMBER, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XLVII. October 30-November 1.	No. XLVIII. November 4-6.	No. XLIX. November 9-10.
Form	Circular, becoming elongated	Elliptical	Irregular, but somewhat oval
Size	Large	Large	Very large
Depth	Moderate	Moderate	Moderate
Where first observed	Over Scotland	To the west of the Hebrides	Off our western coasts
Direction of Motion	Easterly	North-easterly	Northerly
Rate of Motion	Slow	Slow	Moderate
Regions passed over by steepest Gradients.	United Kingdom	Ireland, Scotland, and the north of England.	The United Kingdom
Termination	Disappeared over the Baltic	Travelled away to the northward of Great Britain.	Disappeared to the northward of the United Kingdom.
Time under Observation	Two days	Two days	One day
Accompanying Winds	Easterly in the north and east, and Westerly in Ireland and south England; strong generally, a gale in Scotland.	Southerly, veering to South-west and West; strong in the west and north, and moderate in the south and east.	Strong Southerly winds, veering to West in the south of Ireland.
„ Weather	Moderately fine, but cloudy in places	Cloudy or dull, becoming finer	Very unsettled and squally. Thunder, lightning, and hail showers reported from many places.
„ Rainfall	Slight, but pretty general	Pretty general, but slight. At Sumburgh Head, however, it was heavy.	Heavy in the south and west; moderate elsewhere.
REMARKS	In this instance the centre of the depression travelled eastward along a path which lay to the southward of those followed by its predecessors. After crossing Scotland it passed to Sweden and the Baltic.	The arrival of this depression was preceded by that of another which made its appearance on the 2nd, and caused strong winds to blow in the Hebrides and along the Norwegian coast.	This depression was preceded by two others of less importance, which skirted our coasts and caused strong winds and heavy rain on our western littoral. As in the present instance their direction was Northerly, the relatively high pressure over Scandinavia resisting their further eastward progress.

TABLE OF CYCLONIC SYSTEMS.—NOVEMBER, 1877.

No. L. **November 11-13.**	No. LI. **November 19-21.**	No. LII. **November 21-24.**	No. LIII. **November 24.**
Uncertain	Variable, but generally oval	Elliptical	Elongated.
Very large	Very large	Very large	Moderate.
Very deep	Moderate	Deep	Shallow.
To the north-west of the British Isles	Off our north-western coasts	Near the Hebrides	To the southward of Ireland.
Northerly	Easterly at first, then north-easterly	North-easterly and then easterly	Easterly.
Slow	Slow	Slow	Moderate.
Northern France, the United Kingdom, and the North Sea.	Scotland and north-east England	The British Isles and Denmark	South-western portion of England.
Disappeared to the northward of Scotland.	Disappeared over Scandinavia	Travelled away over Russia	Disappeared over Germany.
Two and a half days	Two days	Three days	About half a day.
Southerly to Westerly; strong gales being reported very generally.	Southerly and South-westerly, veering to North-west.	Southerly, veering to West and North-west; strong to a gale.	Northerly in south of Ireland, Easterly in England; strong to a heavy gale.
Very unsettled and wet over the whole of western Europe.	Dull, wet, and unsettled, with hail and snow in places.	Dull or very cloudy, with showers. Lightning occurred locally.	Fine in the north, but dull and cloudy elsewhere, with rain and fog in places.
Heavy, and very general	Very general, and on the east coast of Scotland very heavy.	Very general, and in the north-west very heavy.	Very general over the southern half of the country, and along the Channel coasts very heavy.
With this depression very steep gradients prevailed over the whole kingdom. The centre kept to the westward of our Islands.	Two other systems of low pressure had passed to the northward of Scotland just before the arrival of this depression, and both had caused strong gales to blow over the northern portion of the kingdom. With one of these systems, on the 16th, the very high wind velocity of 83 miles per hour was recorded by the anemometer at Sandwick.	The centre of this depression kept to the northward of Scotland, but was at one time not far from the coast.	This disturbance, which seems to have been subsidiary to a larger one, passed up the Channel, and the Easterly gale was therefore most felt over the southern portion of England.

TABLE OF CYCLONIC SYSTEMS.—DECEMBER, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. LIV. November 28—December 1.	No. LV. December 5-7.	No. LVI. December 11-13.
Form	Circular and then oval	Uncertain	Circular, becoming oval
Size	Very large	Very large	Very large
Depth	Deep	Deep	Deep
Where first Observed	West of Ireland	To the south-west of Ireland	Off the north-west of Scotland
Direction of Motion	North-easterly, changing to south-easterly.	North-north-easterly	North-easterly
Rate of Motion	Slow	Slow	Slow
Regions passed over by Steepest Gradients.	Ireland and the south-east of England	Ireland and Scotland	British Isles and Scandinavia
Termination	Disappeared over the Mediterranean	Travelled to the northward of Norway.	Travelled away to the north of the British Isles.
Time under Observation	Three days	Two days	Two days
Accompanying Winds	Southerly to Westerly, veering generally to North.	Southerly, veering to Westerly; strong to a gale in places.	Southerly, veering to Westerly. Gales occurred in Scotland, Ireland, and the west of England.
„ **Weather**	Overcast, squally, and wet; thunder and lightning occurred in the west.	Overcast generally, becoming finer and bright.	Squally, overcast, and unsettled. Sleet and lightning in Scotland.
„ **Rainfall**	General, and in a few places heavy	Very general, and in places heavy	General, and in Scotland heavy
REMARKS	The track followed by this depression lay to the southward of most of those which had preceded it. After crossing Scotland it passed south-eastwards over France, and an area of high pressure developed itself over the United Kingdom. This depression was preceded by another, whose centre kept to the northward of Scotland.	This depression arriving at a time when pressure was high over western Europe, merely skirted our coasts.	The passage of this depression was accompanied by one or two shallow subsidiary areas of low pressure over England and northern France.

Table of Cyclonic Systems.—December, 1877.

No. LVII. **December 22-23.**	No. LVIII. **December 24-25.**	No. LIX. **December 26-27.**	No. LX. **December 30-31.**
Not known	Elliptical	Oval	Oval.
Very large	Very large	Very large	Small.
Deep	Deep	Deep	Shallow.
To the northward of Scotland	Over the North Sea	North of Scotland	Over our Midland counties.
North-easterly	Easterly	South-easterly	Easterly.
Slow	Slow	Very slow	Slow.
Scotland, Norway, and Sweden	North Sea and Denmark	Scotland and the north of Ireland	North Sea.
Disappeared over Lapland	Disappeared over the Baltic	Filled up over the North Sea and Denmark.	Dispersed over Germany.
One and a half days	One and a half days	One day	One day.
South-westerly, veering to West and North, and blowing a gale in Scotland.	Westerly to Northerly, becoming generally North-westerly. Gales were experienced in Scotland.	North-westerly and Westerly; strong. A gale in Scotland.	Southerly, veering to West and North-west.
Very cloudy or overcast generally; clearing later on.	Overcast or very cloudy, and in places squally, clearing up in the rear of the depression.	Cloudy or dull over the whole of western Europe. Snow or hail in many places.	At first dull and unsettled, except in Scotland, afterwards becoming fine generally.
Slight. Sleet and snow fell in Scotland.	Hail and snow in the north, rain in the south; slight.	Rather general, but moderate	General in the west and south, and in places rather heavy.
Pressure during most of this interval was high over southern England and France, and consequently the gradients for Westerly winds were rather steep.	This disturbance crossed our northern coasts during the night of the 23rd, and had reached the North Sea by the morning of the 24th.	This depression followed closely upon the preceding one, and was observed on our northern coasts at the time that No. LVIII. was near the Baltic.	This depression was subsidiary to a large one which had just passed in a north-easterly direction to the northward of Scotland.

TABLES OF GALES.

No. 21. (Cyclonic Systems, Nos. 41 and 42.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Oct. 12-16, 1877.													
Sandwick.	—?	—?	Noon (15th)? 4 p.m. (15th). 3 a.m. (16th).	W. W. by N. N.W.b.W.	41 56 41	3 10 3	1 p.m. (16th).	W.N.W.	—	7 p.m. (15th).	N.W.	69	The clock was stopped between 9 a.m. 14th, when the velocity was 9 miles per hour, and noon 15th, when 40 miles per hour were recorded.
Aberdeen.	11 p.m. (14th).	S.S.E.	—	—	—	—	3 a.m. (15th).	S.S.E.	4	Midt. (14th).	S. by E.	33	
	Noon (15th).	S.W. by W.	—	—	—	—	7 p.m. (15th).	S.W. by S.	7	1 p.m. (15th).	S.W. by W.	36	
Glasgow.	1 p.m. (14th).	S. by E.	—	—	—	—	8 p.m. (14th).	S. by E.	7	3 p.m. (14th).	S. by E.	39	
	7 a.m. (15th).	W. by S.	8 a.m. (15th).	W. by S.	40	1	10 a.m. (15th).	W. by S.	3	8 a.m. (15th).	W. by S.	40	—
	Noon (15th).	W.S.W.	2 p.m. (15th).	S.W. by S.	40	1	5 p.m. (15th).	S.W. by S.	5	2 p.m. (15th).	S.W. by S.	40	—
Alnwick Castle.	4 a.m. (15th).	S. by W.	—	—	—	—	7 a.m. (15th).	S.S.W.	3	6 a.m. (15th).	S. by W.	36	—
	8 a.m. (15th).	S.S.W.	9 a.m. (15th). 5 p.m. (15th).	W. by N. S.W.	48 40	4 1	7 p.m. (15th).	S.W.	11	9 a.m. (15th).	W. by N.	50	—
Seaham	10 p.m. (14th).	S.	—	—	—	—	1 a.m. (15th).	S.	3	11 p.m. (14th).	S.	35	—
	3 a.m. (15th).	S. by W.	4 a.m. (15th).	S. by W.	40	1	11 a.m. (15th).	W.S.W.	8	4 a.m. (15th).	S. by W.	40	—
Stonyhurst.	9 p.m. (14th).	S. by E.	1 a.m. (15th).	S.	49	5	10 a.m. (15th).	W.S.W.	13	2&3 a.m. (15th).	S. by E.	52	Velocity also reached 33 miles at 8 and 11 p.m. 15th.
Holyhead.	9 p.m. (12th).	S.S.E.	Noon (13th). 4 p.m. (13th). 7 p.m. (13th). 5 a.m. (14th). 4 a.m. (15th). 5 p.m. (15th).	S.S.W. S.S.W. S.S.W. S. by W. W. S.W.	41 41 41 47 48 45	2 2 1 22 5 7	3 p.m. (16th).	N.W.	90	5 a.m. (15th).	W.N.W.	58	The strong winds on 12th and 13th were caused by the preceding depression; but it is difficult to say when the influence of the one ended and the other began.
	9 p.m. (16th).	W. by N.	—	—	—	—	Midt. (16th).	W. by N.	3	10 & 11 p.m. (16th).	W. by N.	31	
Valencia.	3 p.m. (12th).	S.E. by S.	8 p.m. (12th).	S.W. by W.	46	43	3 p.m. (14th).	S.W. by S.	48	1 p.m. (14th). 2 p.m. (14th).	S. S. by E.	56	During the earlier portion of this time the high velocity was due to the preceding depression.
	10 p.m. (14th).	N.W. by N.	Midt. (14th).	N.W.	40	1	9 a.m. (15th).	W.N.W.	11	Midt. (14th).	N.W.	40	
	Noon (15th).	W.	3 p.m. (15th).	W.	43	3	8 p.m. (15th).	W.	8	3 p.m. (15th).	W.	46	
Falmouth.	11 a.m. (14th).	S.	—	—	—	—	1 p.m. (14th).	S. by E.	2	11 a.m. (14th).	S.	32	—
	5 p.m. (14th).	S. by E.	7 p.m. (14th).	S.	57	8	5 a.m. (15th).	W. by N.	12	11 p.m. (14th).	S.	72	32 miles were also recorded at 7 a.m. 30 miles at 10 a.m. and 1 p.m. 15th, and 33 miles at 2 p.m. 15th.
Kew -	Midt. (14th).	S. by W.	3 a.m. (15th).	S.W. by S.	42	1	8 a.m. (15th).	S.W.	8	3 a.m. (15th).	S.W. by S.	42	—
Yarmouth.	8 p.m. (14th).	S.	—	—	—	—	10 p.m. (14th).	S.	2	9 p.m. (14th).	S.	36	—
	2 a.m. (15th).	S. by W.	—	—	—	—	Noon (15th).	W. by S.	10	4 a.m. (15th).	S.S.W.	36	Wind again rose to 33 miles per hour at 6 p.m. 15th.

No. 22. (CYCLONIC SYSTEM, No. 43.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Oct. 20-23, 1877.													
Sandwick	8 a.m. (21st).	S.E.	Noon (21st).	S.E.	41	1	4 p.m. (21st).	S.S.E.	8	Noon (21st).	S.E.	41	31 miles were registered at 3 a.m. 21st.
Alnwick Castle.	6 p.m. (22nd).	W.S.W.	11 p.m. (22nd).	W.S.W.	40	2	2 a.m. (23rd).	W. by S.	8	11 p.m. (22nd). Midt. (22nd).	W.S.W. W. by S.	40	—
Stonyhurst.	Noon (21st).	S. by E.	—	—	—	—	2 p.m. (21st).	S. by E.	2	1 p.m. (21st).	S. by E.	31	—
	3 p.m. (21st).	S. by E.	—	—	—	—	5 p.m. (21st).	S.	2	3 p.m. (21st).	S. by E.	33	—
Holyhead.	3 p.m. (20th).	S.	1 a.m. (21st).	S.S.E.	45	13	4 p.m. (21st).	S.S.W.	25	10 a.m. (21st).	S. by E.	51	30 miles were also recorded at 6 and 10 p.m. and Midt., 21st.
	4 a.m. (22nd).	S. by W.	—	—	—	—	11 a.m. (22nd).	S.W.	7	9 a.m. (22nd).	S. by W.	38	
Valencia	1 p.m. (20th).	S. by W.	Midt. (20th). 1 p.m. (21st). 3 a.m. (22nd).	S. S.W. by S. S.S.W.	49 40 40	10 1 1	7 a.m. (22nd).	W.S.W.	42	3 a.m. (21st).	S.	64	—
Falmouth	2 a.m. (21st).	S. by W.	—	—	—	—	3 p.m. (21st).	S.W. by S.	13	1 p.m. (21st).	S. by W.	39	—

No. 23. (CYCLONIC SYSTEM, No. 47.)

Oct. 30—Nov. 1, 1877.													
Sandwick.	6 a.m. (31st).	W.	—	—	—	—	10 a.m. (31st).	W.S.W.	4	7 a.m. (31st).	W.	33	30 miles were registered at 1 a.m. and 33 miles at 4 a.m. 31st.
	11 a.m. (31st).	W.S.W.	3 p.m. (31st).	W.S.W.	48	11	10 a.m. (1st).	W. by N.	23	5 p.m. (31st). 7 p.m. (31st). 9 p.m. (31st).	W. W.N.W. W. by N.	54	—
Aberdeen	11 p.m. (30th).	W. by N.	—	—	—	—	2 a.m. (31st).	W.N.W.	3	11 p.m. (30th). Midt. (30th).	W. by N. W.N.W	35	Wind again rose to 32 miles at 7 and 9 p.m. 31st, and to 33 miles at 2 a.m. 1st.
Alnwick Castle.	6 p.m. (30th).	SWb.W	9 p.m. (30th). 1 a.m. (31st). 6 a.m. (31st). 2 p.m. (31st). 7 p.m. (31st).	W. by S. N.W.b.W. W.N.W W. W. by N.	42 44 41 43 41	1 1 1 1 1	10 p.m. (31st).	W. by N.	28	1 a.m. (31st).	N.W.b.W.	44	—
Seaham	Midt. (30th).	W.N.W.	—	—	—	—	5 a.m. (31st).	W.N.W.	5	1 a.m. (31st).	W. by N.	35	—
Stonyhurst.	10 p.m. (30th).	W. by S.	—	—	—	—	Midt. (30th).	W.	2	10 p.m. (30th).	W. by S.	32	—
	2 a.m. (31st).	W.	—	—	—	—	4 a.m. (31st).	W.	2	3 a.m. (31st).	W.	35	—
	Noon (31st).	W.S.W.	—	—	—	—	4 p.m. (31st).	W.S.W.	4	1 p.m. (31st).	W. by S.	36	—
Holyhead	9 a.m. (30th).	S.	10 a.m. (30th). 9 p.m. (30th).	S. W.N.W.	43 43	6 3	2 a.m. (31st).	W. by N.	17	Noon (30th).	S.	52	30 miles were recorded at 3 a.m. 6 and 8 p.m., and 31 miles at 9 p.m. 31st, and 32 miles at 1 a.m. 1st.
Valencia	3 a.m. (30th).	S.S.W.	6 a.m. (30th).	S.	47	10	8 p.m. (30th).	W. by N.	17	2 p.m. (30th).	S.W.byW.	53	
Falmouth	11 a.m. (30th).	S.W. by S.	1 p.m. (30th).	S.W. by S.	45	9	11 p.m. (30th).	W. by N.	12	4 p.m. (30th). 5 p.m. (30th).	S.W.byW. W.S.W.	50	—
Yarmouth	2 a.m. (31st).	W. by N.	—	—	—	—	5 a.m. (31st).	W.N.W.	3	2 a.m. (31st).	W. by N.	35	—

No. 24. (Cyclonic System, No. 50.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Nov. 11-13, 1877.													
Sandwick.	11 a.m. (11th).	S. by E.	Noon (11th).	S.S.E.	49	11	2 a.m. (12th).	S.	15	8 p.m. (11th).	S.E. by S.	60	—
	11 a.m. (12th).	S. by E.	1 p.m. (12th).	S.S.E.	48	11	7 a.m. (13th).	S. by E.	20	6&8p.m. (12th).	S.S.E.	56	—
Aberdeen.	10 a.m. (11th).	S.S.E.	2 p.m. (11th).	S.E. by S.	46	7	10 p.m. (11th).	S.	12	6 p.m. (11th).	S.E. by S.	51	—
	3 p.m (12th).	S.S.E.	—	—	—	—	10 p.m. (12th).	S. by E.	7	6 p.m. (12th). 7 p.m. (12th).	S.S.E. S. by E.	37	—
Glasgow.	3 p.m. (11th).	S.E. by S.	—	—	—	—	7 p.m. (11th).	S.	4	4 p.m. (11th.)	S.E. by S.	36	—
	5 p.m. (12th).	S.	—	—	—	—	7 p.m. (12th).	S.	2	6 p.m. (12th).	S.	33	—
Alnwick Castle.	Noon (11th).	S. by E.	2 p.m. (11th).	S. by E.	43	1	9 p.m. (11th).	S. by W.	9	7 p.m. (11th).	S. by E.	45	—
			4 p.m. (11th).	S. by E.	43	4							
Seaham	1 p.m. (12th).	S. by W.	—	—	—	—	3 p.m. (12th).	S. by W.	2	2 p.m. (12th).	S. by W.	35	33 miles were also recorded at 7 and 8 p.m. 11th.
Stonyhurst.	9 a.m. (11th).	S. by E.	11 a.m. (11th).	S. by E.	46	8	8 p.m. (11th).	S.W.byW.	11	6 p.m. (11th).	S.S.E.	52	31 miles were recorded at 11 a.m. 12th.
Holyhead.	3 a.m. (11th).	SW.b.S.	7 a.m. (11th).	S.	58	10	10 p.m. (11th).	S.W.	19	2 p.m. (11th).	S.	64	—
			6 p.m. (11th).	S.S.W.	41	1							
	7 a.m. (12th).	S.S.W.	11 a.m. (12th).	S.S.W.	43	7	7 p.m. (12th).	S.S.W.	12	3 p.m. (12th).	S.	48	—
Armagh	8 a.m. (11th).	S. by E.	—	—	—	—	2 p.m. (11th).	S. by W.	6	9 a.m. (11th).	S. by E.	38	—
Valencia.	Midnt. (10th).	S.W.	1 a.m. (11th).	S.S.W.	52	15	8 p.m. (11th).	W. by N.	20	11 a.m. (11th).	S.W.byS.	61	—
	Midnt. (11th).	W. by N.	—	—	—	—	6 a.m (12th).	S.W.byS.	6	3 a.m. (12th).	S.W.b.W.	35	—
	Noon (12th).	S.W.b.W.	—	—	—	—	2 p.m. (12th).	W. by S.	2	Noon (12th).	S.W.b.W.	32	—
Falmouth.	6 a.m. (11th).	S.S.W.	11 a.m. (11th).	S.S.W.	47	8	7 p.m. (11th).	W.	13	11 a.m. (11th).	S.S.W.	51	—
	11 a.m. (12th).	S.S.W.	—	—	—	—	4 p.m. (12th).	S. by W.	5	11 a.m. (12th). Noon (12th).	S.S.W. S. by W.	36	30 miles were also registered at 9 a.m. 12th.
Kew	11 a.m. (11th).	S.	4 p.m. (11th).	S.	41	1	Midnt. (11th).	W.S.W.	13	11 p.m. (11th).	S. by E.	45	—
			6 p.m. (11th).	S.	40	1							
			8 p.m. (11th).	S. by E.	43	4							
Yarmouth	11 a.m. (11th).	S.S.W.	4 p.m. (11th).	S. by W.	43	2	4 a.m. (12th).	W. by S.	17	1 a.m. (12th).	S. by W.	50	—
			8 p.m. (11th).	S.S.W.	45	8							

No. 25. (Cyclonic System, No. 50a.)

Stations.	Velocity 30–40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Nov. 14–16, 1877.													
Sandwick.	5 p.m. (14th).	S. by E.	7 p.m. (14th).	S.S.E.	45	4	7 a.m. (15th).	S.W.	14	8&9p.m. (14th).	S.S.E.	45	—
			4 a.m. (15th).	S.W.b.W.	42	2							
	8 a.m. (15th).	S.W.b.W.	Noon (15th).	W.S.W.	42	2	4 p.m. (15th).	W.S.W.	8	1 p.m. (15th).	W.S.W.	44	—
	10 p.m. (15th).	S.S.E.	Midnt. (15th).	S.	52	9	1 a.m. (17th).	W.S.W.	27	3 a.m. (16th).	W.	83	—
			11 a.m. (16th).	S.W.b.W.	41	2							
			2 p.m. (16th).	W.S.W.	47	7							
Aberdeen.	7 p.m. (14th).	S.S.E.	—	-	—	—	1 a.m. (15th).	S.S.E.	6	8&9p.m. (14th).	S.S.E.	34	—
										11 p.m. (14th).	S. by E.		
	Midnt. (15th).	S. by W.	1 a.m. (16th).	S.W. by S.	41	2	4 a.m. (16th).	S.W.	4	1 a.m. (16th).	S.W. byS.	41	—
Glasgow -	8 p.m. (15th).	S. by E.	11 p.m. (15th).	S.W. by S.	44	3	2 a.m. (16th).	W.S.W.	6	11 p.m. (15th).	S.W. byS.	47	—
Alnwick Castle.	6 a.m. (15th).	S.W.b.W.	—	—	—	—	8 a.m. (15th).	S.W.	2	7 a.m. (15th).	S.W.	34	36 miles were registered at noon. and 30 miles at 11 p.m. 15th.
	—	—	1 a.m. (16th).	S.W.	45	2	3 a.m. (16th).	W.	2	1 a.m. (16th).	S.W.	50	
	Noon (16th).	W. by S.	—	—	—	—	3 p.m. (16th).	W. by S.	3	1 p.m. (16th).	W.S.W.	33	—
										2 p.m. (16th).	W. by S.		
	4 p.m. (16th).	W. by S.	—	—	—	—	7 p.m. (16th).	W. by S.	3	5 p.m. (16th).	W.S.W.	35	—
Holyhead.	Noon (14th).	S.	2 p.m. (14th).	S.	48	10	1 a.m. (15th).	S.W. by S.	13	9 p.m. (14th).	S.	58	—
	2 p.m. (15th).	S.	6 p.m. (15th).	S. by W.	42	6	2 a.m. (16th).	W.	12	9 p.m. (15th).	S. by W.	44	—
Armagh -	6 p.m. (14th).	S. by W.	—	—	—	—	9 p.m. (14th).	S. by W.	3	7 p.m. (14th).	S. by W.	33	Wind again rose to 30 miles at 6 and 10 p.m. 15th.
Valencia.	7 a.m. (14th).	S.S.E.	11 a.m. (14th).	S.E. by S.	44	4	8 p.m. (14th).	W.S.W.	13	Noon (14th).	S.E. by S.	46	—
	11 a.m. (15th).	S.S.E.	1 p.m. (15th).	S. by E.	43	7	9 p.m. (15th).	W.	10	6 p.m. (15th).	S.S.W.	48	—
Falmouth	7 p.m. (14th).	S. by W.	—	—	—	—	Midnt. (14th).	S.S.W.	5	8 p.m. (14th).	S. by W.	38	—

No. 26. (Cyclonic System, No. 51.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Nov. 19-20, 1877.													
Aberdeen	Noon (20th).	N.W.b.W.	—	—	—	—	3 p.m. (20th).	W.N.W.	3	Noon 1&2p.m. (20th).	N.W.b.W.	30	—
Alnwick Castle.	8 a.m. (20th).	N.W.b.W.	10 a.m. (20th).	N.W.	41	1	4 p.m. (20th).	N.W.	8	10 a.m. (20th).	N.W.	41	—
Seaham -	10 a.m. (20th).	N.W.b.W.	—	—	—	—	Noon (20th).	N.W.byN.	2	10 a.m. (20th). 11 a.m. (20th).	N.W.b.W. N.W.	30	—
Holy-head.	7 a.m. (19th).	S. by W.	9 a.m. (19th).	S. by W.	41	2	Noon (19th).	S.S.W.	5	10 a.m. (19th).	S.	42	—
	1 p.m. (19th).	W. by S.	—	—	—	—	6 p.m. (19th).	W. by N.	5	2 p.m. (19th). 3 p.m. (19th).	W.N.W. N.W.b.W.	39	—
	9 p.m. (19th).	W.byN.	3 a.m. (20th). 5 a.m. (20th). 2 p.m. (20th).	W. by N. W.N.W. N.W.	40 49 40	1 8 1	11 p.m. (20th).	W.N.W.	26	7 a.m. (20th).	N.W.byN.	61	—
Valencia	Midnt. (18th).	S.W. by S.	2 a.m. (19th).	S.S.W.	42	2	5 a.m. (19th).	W.S.W.	5	3 a.m. (19th).	S. by W.	43	32 miles were also recorded at 6 a.m. 19th.
Falmouth	11 a.m. (20th).	N.W.b.W.	—	—	—	—	1 p.m. (20th).	N.W.byN.	2	11 a.m. (20th).	N.W.b.W.	38	—

No. 27. (Cyclonic System, No. 52.)

Nov. 21-23, 1877.													
Sand-wick.	3 p.m. (21st).	S.S.E.	5 p.m. (21st).	S.S.E.	44	5	10 p.m. (21st).	S.	7	8 p.m. (21st).	S. by E.	48	—
	7 a.m. (22nd).	W. by S.	—	—	—	—	9 a.m. (22nd).	W.S.W.	2	7&8a.m. (22nd).	W. by S.	32	—
	2 a.m. (23rd).	N.byW.	4 a.m. (23rd). 9 a.m. (23rd).	N. by W. N.N.W.	42 40	4 2	5 p.m. (23rd).	N.W.	15	4&5a.m. (23rd).	N. by W.	43	—
Aberdeen	4 a.m. (23rd).	W.N.W.	5 a.m. (23rd).	W. by N.	44	3	11 a.m. (23rd).	N.W.b.W.	7	6 a.m. (23rd).	W.N.W.	46	—
Aln-wick Castle.	9 p.m. (21st).	S.W.	10 p.m. (21st).	S.W.	44	1	2 a.m. (22nd).	W. by S.	5	10 p.m. (21st).	S.W.	44	—
	3 a.m. (22nd).	W.S.W.	11 a.m. (22nd).	S.W.byW.	41	1	3 p.m. (22nd).	W.S.W.	12	11 a.m. (22nd).	S.W.byW.	41	—
	10 p.m. (22nd).	W. by S.	—	—	—	—	Midt. (22nd).	W. by S.	2	11 p.m. (22nd).	W. by S.	35	—
	3 a.m. (23rd).	W. by N.	4 a.m. (23rd).	W.N.W.	43	3	9 a.m. (23rd).	W.N.W.	6	6 a.m. (23rd).	N.W.b.W.	44	32 miles were also recorded at 1 and 11 a.m., and 31 miles at 1 p.m. 23rd.
Seaham -	3 a.m. (23rd).	W.N.W.	—	—	—	—	11 a.m. (23rd).	W.N.W.	8	5 a.m. (23rd). 8 a.m. (23rd).	W.N.W. N.W.b.W.	35	—
Stony-hurst.	10 a.m. (22nd).	S.W. by W.	6 p.m. (22nd). 11 p.m. (22nd). 5 a.m. (23rd).	W.S.W. W. W.	45 45 45	2 4 1	1 p.m. (23rd).	W.	27	7 p.m. (22nd). Midt. (22nd). 1 a.m. (23rd).	W. by S. W. W.	48	—

(*Table continued on next page.*)

No. 27. (Cyclonic System, No. 52)—*continued.*

Stations.	Velocity 30–40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Nov. 21–23, 1877.													
Holy-head.	8 a.m. (21st).	S. by E.	—	—	—	—	Noon (21st).	S.S.W.	4	11 a.m. (21st),	S. by E.	39	—
	2 p.m. (21st).	S.W. by S.	4 a.m. (22nd).	S.W.byW.	49	30	1 p.m. (23rd).	W.	47	1 a.m. (23rd).	W. by N.	60	—
Armagh -	9 p.m. (22nd).	W. by N.	—	—	—	—	2 a.m. (23rd).	W. by N.	5	11 p.m. (22nd).	W. by N.	37	32 miles were also recorded at 2 p.m. 22nd.
Valencia -	2 a.m. (21st).	W.byS.	Noon (21st). 7 p.m. (21st). 10 p.m. (21st).	S.W.byW. W.S.W. W. by S.	46 42 44	6 1 22	1 a.m. (23rd).	W. by N.	47	6 a.m. (22nd).	W.	50	—
Fal-mouth.	4 p.m. (21st).	S.W.byW.	8 p.m. (21st).	S.W.byW.	44	6	5 a.m. (22nd).	W. by S.	13	11 p.m. (21st).	S.W.byW.	47	—
	6 a.m. (22nd).	W.	2 p.m. (22nd).	W.	43	10	7 a.m. (23rd).	W.N.W.	25	9 p.m. (22nd.)	W. by N.	46	—
Kew -	2 a.m. (23rd).	W.S.W.	—	—	—	—	6 a.m. (23rd).	W. by S.	4	5 a.m. (23rd).	W.S.W.	35	30 miles were registered at Midnight 21st, and 1 p.m. 22nd.
Yar-mouth.	Noon (22nd).	W. by S.	—	—	—	—	3 p.m. (22nd).	W. by S.	3	Noon (22nd).	W. by S.	33	—
	4 p.m. (22nd).	W. by S.	—	—	—	—	11 p.m. (22nd).	W.	7	9 p.m. (22nd).	W.S.W.	32	—
	3 a.m. (23rd).	W.	4 a.m. (23rd).	W. by N.	42	3	3 p.m. (23rd).	W.N.W.	12	5 a.m. (23rd).	W. by N.	43	Wind rose to 31 miles at 1 a.m. 23rd.

No. 28. (Cyclonic System, No. 56.)

Dec. 11–12, 1877.													
Sandwick	11 a.m. (11th).	S. by E.	4 p.m. (11th).	S. by E.	44	4	10 p.m. (11th).	S.	11	5 p.m. (11th).	S. by E.	46	—
Aberdeen	3 p.m. (11th).	S.S.E.	—	—	—	—	10 p.m. (11th).	S. by E.	7	6 p.m. (11th).	S.S.E.	38	—
Glasgow -	7 p.m. (11th).	S. by E.	—	—	—	—	9 p.m. (11th).	S. by W.	2	7 p.m. (11th).	S. by E.	31	—
Alnwick Castle.	10 a.m. (12th).	S.W. byS.	11 a.m. (12th).	W. by S.	42	1	3 p.m. (12th).	W.	5	11 a.m. (12th).	W. by S.	42	32 miles were also recorded at 6 a.m., 34 miles at 5 p.m., and 36 miles at 7 p.m. 12th.
Seaham -	10 a.m. (12th).	S.W.	—	—	—	—	1 p.m. (12th).	W.	3	Noon (12th).	W.	32	30 miles were recorded at 2 p.m. 12th.
Stony-hurst.	8 p.m. (11th).	S.	—	—	—	—	2 a.m. (12th).	S. by W.	6	11 p.m. (11th).	S.	36	—
	9 a.m. (12th).	W. by S.	—	—	—	—	3 p.m. (12th).	W. by S.	6	11 a.m. (12th).	W. by S.	36	—
Holyhead	11 a.m. (11th).	SW.b.S.	Noon (11th). 5 a.m. (12th).	S.S.W. S.W.byW.	46 43	13 4	3 p.m. (12th).	W.	28	6 p.m. (11th).	S.S.W.	54	—
Armagh -	11 a.m. (11th).	S.	—	—	—	—	6 p.m. (11th).	S. by W.	7	1 p.m. (11th).	S.	38	—
Valencia -	4 a.m. (11th).	S.S.W.	7 a.m. (11th). Midt. (11th).	S. by W. W.S.W.	52 40	13 2	6 a.m. (12th).	N.W.b.W.	26	1 p.m. (11th).	S.S.W.	59	Wind rose to 30 miles at Noon 12th.
Falmouth	6 p.m. (11th).	S.W.byS.	—	—	—	—	5 a.m. (12th).	W. by S.	11	2 a.m. (12th).	S.W. by S.	39	—
Kew -	6 a.m. (12th).	S.S.W.	—	—	—	—	8 a.m. (12th).	S.S.W.	2	7 a.m. (12th).	S.S.W.	31	—

No. 29. (Cyclonic System, No. 58.)

Stations.	Velocity 30-40 Miles per Hour.		Velocity Exceeding 40 Miles per Hour.				Velocity Fell below 30 Miles per Hour.		Total No. of Hours the Vel. above 30 Mls.	Maximum Velocity.			Remarks.
	Commenced.	Direction of Wind.	Commenced.	Direction of Wind.	Mean Vel.	Duration in Hours.	Ended.	Direction of Wind.		Hour.	Direction of Wind.	Velocity.	
Dec. 24-25, 1877.													
Sandwick.	—	—	6 a.m. (24th). 1 a.m. (25th). 3 a.m. (25th).	N. N.W. N.W.	49 41 42	18 1 1	8 a.m. (25th).	N. by W.	26	3 p.m. (24th).	N.W.	62	—
Aberdeen.	8 a.m. (24th).	W.byS.	4 p.m. (24th). 9 p.m. (24th).	W. by N. W. by N.	43 40	3 1	Midt. (24th).	W. by S.	16	5 p.m. (24th).	W.N.W.	47	—
Glasgow.	1 a.m. (24th).	S.W.byW.	—	—	—	—	5 a.m. (24th).	W.S.W.	4	2 a.m. (24th). 4 a.m. (24th).	S.W.byW. W.S.W.	35	—
	Noon (24th).	W.N.W.	—	—	—	—	2 p.m. (24th).	W.N.W.	2	Noon (24th).	W.N.W.	31	—
Alnwick Castle.	Midt. (23rd)	W.S.W.	3 a.m. (24th).	W. by S.	46	4	7 a.m. (24th).	W. by S.	7	4 a.m. (24th).	W.S.W.	49	—
	Noon (24th).	N.W.b.W.	—	—	—	—	4 p.m. (24th).	N.W.	4	Noon (24th).	N.W.b.W.	33	32 miles were recorded at 10 a.m. and 31 miles at 5 and 9 p.m. 24th.
Stonyhurst.	9 a.m. (24th).	W.S.W.	Noon (24th).	W.N.W.	40	1	1 p.m. (24th).	N.W.b.W.	4	Noon (24th).	W.N.W.	40	—
	2 p.m. (24th).	W.N.W.	—	—	—	—	4 p.m. (24th).	W.N.W.	2	2 p.m. (24th).	W.N.W.	34	32 miles were also registered at 3 and 6 a.m. 24th.
Holyhead.	1 p.m. (24th).	W.S.W.	9 a.m. (24th).	N.W.b.W.	48	11	10 p.m. (24th).	N.W.byN.	21	11 a.m. (24th).	N.N.W.	59	—
Falmouth.	11 a.m. (24th).	W. by N.	—	—	—	—	1 p.m. (24th).	W. by N.	2	11 a.m. (24th). Noon (24th).	W.b.N.	32	—

TABLE OF ANTICYCLONIC SYSTEMS.—OCTOBER, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XXI. October 1-14.	No. XXII. October 15-22.
Form	Irregular	Generally oval.
Size	Large	Large.
Height	Small. Max. readings 30·7 ins. on 5th and 6th	Small to moderate. Max. readings 30·5 ins. on 16th.
Where first Observed	British Isles and Scandinavia	Over France.
Direction of Motion	South-westerly, then westerly and southerly	At first northerly, then south-westerly.
Rate of Motion	Generally slow, but at times moderate	Moderate.
Regions passed over	Western Europe	France and the United Kingdom.
Termination	Moved away to the Mediterranean	Travelled to the southward of France.
Accompanying Winds	Variable breezes, becoming Southerly and then Northerly.	Generally Southerly and South-westerly.
„ **Weather**	Cold, fine, and dry; but a great deal of fog and mist prevailed over England.	Moderately clear and dry. Cold nights were experienced, with thick hoar frost in places.
REMARKS	An area of high pressure was first noticed over the British Isles, but it was soon joined by an area of still higher readings, which showed itself over Scandinavia.	This system may have been a reappearance of the previous one, after it had left our area and passed away to the Mediterranean.

TABLE OF ANTICYCLONIC SYSTEMS—NOVEMBER, 1877.

NATURE OF CHARACTERISTICS OBSERVED.	No. XXIII. October 28-November 3.	No. XXIV. November 14-19.
Form	Generally circular	Elliptical
Size	Large	Large
Height	Small. Max. readings 30·5 ins. on 31st and 1st	Small to moderate. Max. readings 30·5 ins. on 15th.
Where first Observed	France and Bay of Biscay	Over France
Direction of Motion	At first easterly, then north-westerly, and then south-easterly.	Extended itself in a north-easterly direction
Rate of Motion	Very slow	Very slow
Regions passed over	South-west portion of Europe	France, Germany, and the British Isles
Termination	Disappeared to the southward of France	Apparently became dispersed over southern Europe.
Accompanying Wind	Variable; but Westerly and South-westerly winds predominated.	West and South-west over the British Isles; Easterly in south of France.
" Weather	Fine, as a rule, in the neighbourhood of the system.	Moderately fine, with a good deal of fog
REMARKS	During the continuance of this system a series of depressions was passing along our northern coasts towards Scandinavia.	Throughout this period also a large area of low readings lay to the northward of our Islands, and the anticyclone became dispersed upon the arrival on the 19th of an area of low pressure upon our northern coasts.

TABLE OF ANTICYCLONIC SYSTEMS—DECEMBER, 1877.

No. XXV. **December 1-4.**	No. XXVI. **December 8-11.**	No. XXVII. **December 13-24.**
Apparently oval	Elliptical	Elliptical.
Large	Large	Large.
Small. Max. readings 30·4 ins.	Small. Max. readings 30·3 ins.	Moderate. Max readings 30·7 ins. on 7th.
Over the Gulf of Bothnia	Over the Bay of Biscay	Southern France.
At first south-westerly then north-easterly	North-easterly	Became extended over the whole of our area.
Moderate	Moderate	Slow.
Scandinavia and the United Kingdom	Western Europe	Western Europe.
Disappeared over Russia	Disappeared over southern Europe	Disappeared over the Peninsula
Easterly and North-easterly	Westerly, becoming Southerly	Variable, but generally Westerly over the British Isles.
At most places the sky was overcast; fog, mist, and rain were reported from many stations.	Generally fine, but foggy. Low temperatures were recorded in the south-east of England.	Fine, to cloudy and dull; slight rain being reported from many places. Temperature was rather high on our coasts, but low over France.
When this system first showed itself over Scandinavia a centre of low pressure lay over the British Isles. As this moved away the high pressure extended itself over the kingdom, but was again dispersed upon the arrival of a new depression soon afterwards.	A large area of low pressure continued off our north-western coasts throughout this period, and the anticyclone gave way upon the arrival of a depression which pursued a rather more southerly path than did those which immediately preceded it.	This was apparently a re-development of the preceding system, in the rear of the low-pressure area which crossed our northern coasts. It gave way again upon the arrival of a depression over Scotland. During the last four days of the month a new anticyclonic area became developed over south-western Europe, the particulars of which will be found in the tables for January 1878.

NOTES to accompany the ANTICYCLONIC TABLES.

October 23rd–27th.—During this interval pressure remained relatively high over the Mediterranean and the Peninsula.

November 4th–13th.—Pressure continued relatively high over the greater part of western Europe; most of the depressions which reached us passing away in a northerly direction.

November 20th–30th.—During the earlier days of this interval the barometer was highest over the Peninsula. After the high pressure had extended northwards a little, over France, on the 26th, it gave way again, and the highest readings were then observed over Scandinavia.

December 5th–7th.—During this period the barometer continued relatively high over the north-western portion of the Continent.

December 25th–31st.—The highest pressures were at first observed over the Peninsula, but on the 28th the high readings began to show themselves over France, and after a few days a large anticyclone developed itself over the south-west of England. On the 31st its centre had become established over the Bay of Biscay.

SECTION III.

Remarks for October, 1877.

(Tables A. to C., October, with Monthly Wind and Weather Charts.)

Wind.—The month opened with variable anticyclonic airs, which soon became developed into a Southerly current, spreading over the greater part of the country, although in the south-east of England light Easterly and North-easterly winds continued. On the 6th the direction again became rather variable, Easterly winds predominating in England, Southerly in Ireland, and Westerly in Scotland, the force continuing moderate, although both in France and Scandinavia it increased considerably. The Westerly current then extended southwards to England, and afterwards veered, so that by the close of the 7th North-west to North was the prevailing direction. Next day fresh to strong Northerly winds were general, but moderating on the 9th, they soon backed again to West and then to South-west. From the 10th to the 16th a succession of depressions passed along our northern coasts, and under their influence the wind varied from South to West and North-west, at times increasing in strength to a gale. On the 17th a moderate North-westerly current had again established itself, but it soon backed once more to South-west and South, and from the latter quarter the wind continued to blow with varying force till the 21st. Another temporary shift to the Westward ensued, and was followed by a fresh retrograde movement, after which the wind circulated around a depression which passed across the north of England and south of Scotland on the 23rd. Light and somewhat variable winds again followed for a day or two, and during the remainder of the month it blew from South and South-west, at times veering temporarily to West, and occasionally increasing in force to a gale. The month closed with Westerly winds, which were generally moderate to fresh in force, but which in some places blew a gale.

Dealing with the result for the whole month, it will be seen that Southerly to Westerly winds predominated over the greater portion of the kingdom, and although South-easterly winds were rather frequent in the extreme north and in Ireland, and North-easterly winds in the Channel Islands, yet as a rule the percentage of wind from Easterly points was very small.

Pressure.—The distribution of mean pressure, as shown by the isobars on the monthly chart, was favourable for a predominance of South-westerly winds, and agreed therefore with the winds observed. The mean values were about normal over the northern half of the kingdom, but were in excess of the average further south, the largest difference being on the Channel coast. The values varied from 29·67 inches at the Orkneys to 30·04 inches at stations in southern England. The range of pressure covered by the readings amounted to 1·9 inches at Armagh and Glasgow, but was less than 1·5 inches at Kew. The maxima occurred at all stations on the 6th, when a portion of a large anticyclonic system covered the kingdom. The minima occurred generally during the night of the 14th–15th, with depression No. XLII.; but at Kew the lowest point was not reached till the 25th, during the passage of a small subsidiary depression over the southern counties of England.

Movements of the Depressions.—During the first part of the month an anticyclonic system existed over the British Isles, and therefore it was not until the middle of the month that any serious depression reached us. The track which was most generally followed was a north-easterly one past the north-western portion of the kingdom, the centres keeping, as a rule, at some distance from the coast. One system, however, travelled from Ireland over southern Scotland and the northern counties of England, while another and smaller disturbance passed over the Channel and southern England to the Netherlands.

Temperature.—The mean temperature for the month ranged from 45° at the Hebrides to 56° at Scilly, and was therefore upon the whole nearly normal, the chief exception being that in Ireland and south-west England it was slightly higher. The maximum temperature of the month was registered very generally on the 14th, when the thermometer rose to 70° at Cambridge, and to nearly as high a point at several other stations in central England. The lowest point was reached very soon afterwards, on the 18th at most stations, when 21°·5 was recorded at Hillington, and temperatures below 25° at a few other English stations, but, as a rule, the readings were not much below 30°. The range of temperature amounted to upwards of 40° at a few stations, but at the majority it was between 30° and 40°.

Vapour Tension was lowest over central England and north-east Scotland, and highest in the south-west of the kingdom, the values varying from 0·24 inch at Nairn to 0·38 inch at Scilly. *Relative Humidity* was pretty uniformly distributed.

Rainfall.—As a rule the fall of rain was below the average, particularly at the midland and south-eastern stations; in the north-west the average was exceeded to a small extent at a few places, but the excess was nowhere very large. On the 14th a very heavy fall, 2·12 inches, was recorded at Stornoway, and the fall on that day was generally heavy in the north and west. On the 12th, 24th, and 28th also, amounts exceeding an inch in 24 hours were measured at various stations.

TABLE A.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of OCTOBER 1877, together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).						TEMPERATURE In the Shade (In Degrees Fahrenheit).						HYGROMETRIC VALUES.		RAINFALL (In English Inches).
	Mean for the Month.	Extremes.				Range.	Mean for the Month.	Extremes.				Range.	Tension of Vapour (In English Inches).	Relative Humidity (Saturation = 100).	
		Minimum.		Maximum.				Minimum.		Maximum.					
		Reading.	Date.	Reading.	Date.			Reading.	Date.	Reading.	Date.				
	ins.	ins.	D. H.	ins.	D. H.	ins.	°	°	D. H.	°	D. H.	°	in.	%	ins.
Valencia - -	29·920*	28·973	14th, 6 p.m.	30·685	6th, 10 p.m.	1·712	53·8	39·3	17th, 1 a.m.	64·4	6th, 3 p.m. 4 p.m.	25·1	·342	82	7·348
Armagh - -	·872	·793	15th, 2 a.m.	·689	6th, 10 a.m.	1·896	49·7	34·0	18th, 7 a.m.	60·7	13th, 1 p.m.	26·7	·316	89	3·270
Glasgow - -	·812	·736	15th, 5 a.m.	·634	6th, 9 a.m.	1·898	47·6	32·4	17th, 11 p.m.	60·3	14th, 8 p.m.	27·9	·277	85	5·346
Aberdeen - -	29·785	28·746	15th, 7 a.m.	·565	6th, 9 a.m. 10 a.m.	1·819	46·2	29·6	19th, 5 a.m.	62·5	6th, 3 p.m.	32·9	·259	84	2·280
Falmouth - -	30·047	29·095†	14th, 11 p.m.	·649	6th, 8 p.m.	1·554	53·4	41·0	17th, 2 a.m.	62·6	14th, Noon	21·6	·330	81	3·850
Stonyhurst -	29·924	28·966	15th, 3 a.m.	·714	6th, 9 a.m.	1·748	47·8‡	29·0	18th, ?	62·9	14th, 2 p.m.	33·9	·277	84	6·681
Kew - -	30·027	29·212	25th, 2 p.m.	30·680	6th, 8 a.m.	1·468	48·5	29·0	18th, 8 a.m.	65·0	14th, 1 p.m.	36·0	·279	82	1·995

* Mean for one day is approximate. † Probable minimum. ‡ Means for two days are approximate.

TABLE B., OCTOBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not

(The Stations are grouped in Districts, and then arranged in order of

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	AIR TEMPERATURE.									
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Means of			Absolute Extremes.			
						Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°	°	°		°	
0. SCOTLAND, N. -	Sandwick Manse (Orkneys)-	29·688	46·1	45·1	45·6	41·8	50·5	46·2	31·7	19th	60·0	5th
1. SCOTLAND, E. -	Glenalmond - - -	29·809	44·6	44·3	44·5	37·6	52·8	45·2	28·2	18th	62·5	1st
2. ENGLAND, N.E. -	Seaham - - -	29·870	48·9	47·0	48·0	41·5	55·2	48·4	29·8	18th	63·0	14th
	Durham* - - -	29·871	48 9	45·2	47·1	40·2	55·2	47·7	28·1	18th	62·9	7th
	Hull - - - -	29·935	48·4	46·7	47·6	41·0	54·8	47·9	29·0	18th	69·5	14th
	Kelstern 𝔐 - - -	29·966	47·9	45·1	46·5	39·9	54·5	47·2	26·2	18th	66·1	14th
3. ENGLAND, E. -	Hillington 𝔐 - - -	30·002	49·8	45·4	47·6	38·9	57·6	48·3	21·5	19th	69·1	14th
	Audley End 𝔐 - -	30·035	48·6	46·2	47·4	38·9	57·1	48·0	26·0	18th	68·2	14th
	Chigwell Row - - -	30·061	47·9	48·9	48·4	42·4	55·7	49·1	28·0	18th	67·3	14th
4. MIDLAND COUNTIES.	Wakefield 𝔐 - - -	29·944	47·8	47·0	47·4	40·5	56·6	48·6	28·2	18th	67·8	14th
	Buxton 𝔐 - - -	29·970	46·3	43·6	45·0	38·8	—	—	29·0	18th	62·9	14th
	Cheadle 𝔐 - - -	29·980	46·8	45·7	46·3	40·8	53·6	47·2	31·9	18th	64·9	14th
	Leicester - - -	29·992	47·4	47·9	47·7	40·9	56·6	48·8	32·0	18th	68·0	14th
	Uppingham - - -	29·992	47·4	45·7	46·6	40·2	55·8	48·0	31·0	18th	67·4	14th
	Oscott - - - -	29·977	47·5	46·6	47·1	40·7	56·5	48·6	32·0	17th	69·0	14th
	Churchstoke 𝔐 - -	30·002	47·8	46·4	47·1	39·7	55·8	47·8	27·0	18th	67·2	14th
	Hereford 𝔐 - - -	30·001	47·6	46·8	47·2	39·8	57·2	48·5	23·4	18th	66·0	14th
5. ENGLAND, S. -	Marlborough 𝔐 - -	30·046	48·6	45·7	47·2	39·2	57·6	48·4	24·5	18th	66·1	14th
	Strathfield Turgiss 𝔐 -	30·047	49·4	45·2	47·3	37·6	58·9	48·3	24·3	18th	68·6	14th
	Ramsgate 𝔐 - - -	30·023	52·1	50·5	51·3	44·9	57·4	51·2	30·4	18th	63·4	14th
	Folkestone - - -	30·045	52·7	49·0	51·9	43·6	57·9	50·8	32·1	18th	63·0	14th
	Hastings - - -	30·056	51·0	50·0	50·5	44·6	57·0	50·8	32·9	17th	63·6	14th
6. SCOTLAND, W. -	——	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND, N.W. -	Hawes 𝔐 - - -	29·917	46·0	44·9	45·5	39·3	53·7	46·5	29·0	18th	63·1	2nd
	Prestwich - - -	29·938	48·2	46·8	47·5	41·7	55·8	48·8	32·2	18th	66·2	14th
	Llandudno 𝔐 - -	29·933	52·9	50·5	51·7	46·3	58·0	52·2	37·3	18th	69·0	14th
8. ENGLAND, S.W. -	Caermarthen 𝔐 - -	29·990	51·1	48·7	49·9	42·9	59·2	51·1	28·9	18th	67·7	15th
	Dartmoor 𝔐 - - -	30·057	48·3	45·8	47·1	41·0	52·9	47·0	32·0	17th	62·6	14th
	Babbacombe 𝔐 - -	30·051	52·8	49·3	51·1	44·8	58·3	51·6	31·3	17th	65·3	14th
9. IRELAND, N. -	Markree Castle - -	29·857	55·3	48·8	52·1	44·0	56·9	50·5	31·3	26th	63·4	4th
10. IRELAND, S.	Dublin - - - -	29·928	50·9	49·7	50·3	45·4	56·9	51·2	36·0	18th	66·1	14th
	Parsonstown - - -	29·923	50·6	49·2	49·9	44·8	58·0	51·4	32·3	17th	66·4	1st
CHANNEL - -	Jersey (St. Aubin's) - -	30·120	56·0	53·4	54·7	49·8	60·1	55·0	43·0	17th	67·3	14th

NOTE.—The stations marked 𝔐 are in connexion with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of OCTOBER 1877, corrected for Diurnal Range.

Latitude, beginning in each case with the Station lying furthest North.)

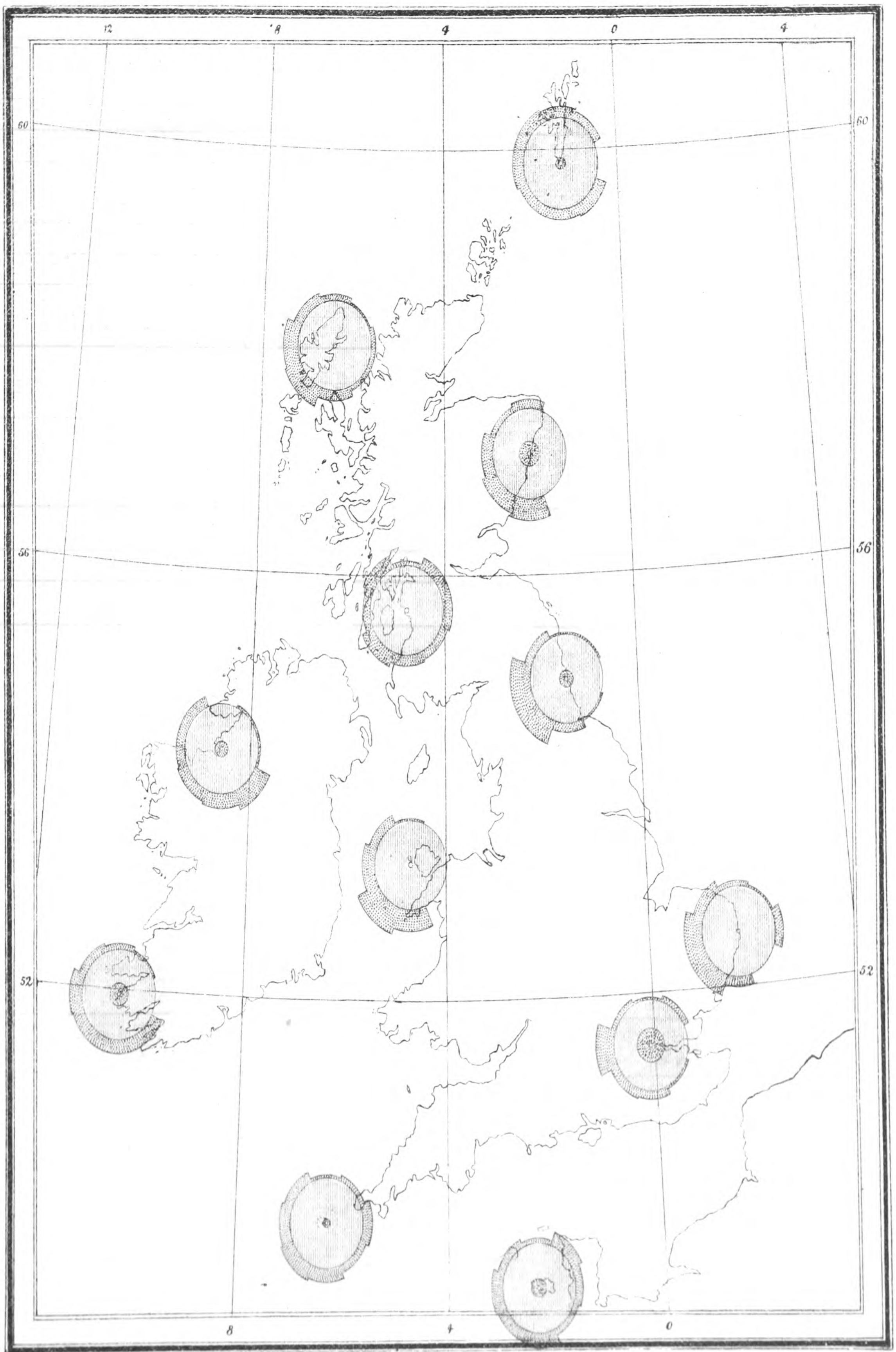
TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10).			RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	%	%	%				ins.	ins.																	
·286	·254	·261	86	85	86	6·3	6·1	6·2	4·570	·600	15th	22	4	2	1	2	9	4	2	0	0	4	13	4	16	9	14
·262	·267	·265	88	89	89	7·3	6·0	6·7	7·620	1·050	14th	21	3	2	0	1	12	0	2	1	3	2	3	15	9	11	16
·296	·287	·292	86	90	88	5·6	4·0	4·8	2·399	·660	19th	16	0	1	0	9	7	2	3	0	2	0	14	15	15	3	10
·287	·272	·280	83	89	86	5·9	4·9	5·4	3·777	·800	19th	20	0	1	0	5	8	0	3	2	0	3	19	15	14	5	1
·298	·286	·292	88	90	89	6·5	4·0	5·3	1·770	·300	23rd	18	0	0	0	7	9	1	0	1	1	0	4	21	8	9	18
·293	·279	·286	87	92	89	5·5	4·6	5·1	2·073	·723	29th	19	0	0	0	8	10	0	3	4	3	3	9	21	9	6	4
·316	·281	·299	88	91	89	5·1	3·6	4·4	2·058	·585	29th	15	0	0	0	10	6	1	4	2	5	1	2	31	12	2	3
·296	·292	·294	86	91	89	6·4	4·3	5·4	1·000	·190	29th	17	0	1	0	5	10	0	2	2	0	0	0	24	7	11	16
·286	·293	·290	86	84	85	5·3	4·9	5·1	2·030	·380	27th	12	0	0	0	5	4	0	15	4	1	4	6	14	12	3	3
·277	·274	·276	83	84	84	5·8	4·4	5·1	2·930	·690	23rd	17	0	0	0	4	6	0	2	0	0	2	7	11	14	2	24
·280	·254	·267	89	88	89	7·5	6·8	7·2	6·295	·900	11th	20	1	1	0	1	11	1	4	3	0	4	1	17	21	10	2
·284	·268	·276	88	87	87	6·8	5·0	5·9	3·060	·560	28th	19	0	2	0	5	10	2	3	2	7	4	11	11	13	10	1
·282	·282	·282	87	86	87	8·0	4·7	6·4	1·300	·420	27th	13	0	0	0	3	12	1	2	6	3	1	4	21	15	4	6
·286	·277	·282	87	89	88	7·2	4·2	5·7	1·077	·257	29th	15	0	0	0	5	9	2	5	3	3	0	8	17	15	4	7
·294	·284	·289	89	89	89	7·6	5·5	6·6	1·520	·180	28th	16	0	0	0	1	11	6	4	6	4	1	15	17	6	5	4
·304	·291	·298	90	91	91	5·6	4·9	5·3	2·677	·370	15th	22	0	1	0	3	4	2	0	3	2	5	7	19	8	2	16
·290	·276	·283	87	87	87	5·8	3·5	4·7	1·998	·270	22nd	19	0	0	0	5	5	0	1	0	0	1	7	7	14	2	30
·293	·279	·286	85	90	87	5·0	4·5	4·8	2·493	·513	29th	15	0	1	0	8	7	0	6	1	2	0	3	24	6	2	18
·289	·274	·282	82	89	85	4·5	4·5	4·5	1·716	·348	29th	12	0	0	2	9	8	0	3	3	2	1	6	18	11	6	12
·304	·302	·303	78	82	80	6·0	5·9	6·0	2·221	·748	24th	14	0	3	0	2	6	4	2	8	0	3	4	23	10	10	2
·326	·306	·316	82	88	85	5·0	5·7	5·4	3·150	1·230	24th	13	0	0	0	5	7	0	14	2	3	0	5	17	15	5	1
·311	·306	·309	83	84	83	5·2	4·9	5·1	3·810	·900	27th	15	0	0	0	9	8	5	9	12	1	0	7	15	12	2	4
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·274	·268	·271	87	89	88	7·3	5·6	6·5	9·240	1·140	12th	23	0	3	0	4	13	1	1	0	2	1	3	19	15	4	17
·285	·282	·284	86	88	87	6·1	5·5	5·8	4·868	·710	20th	21	0	5	1	5	12	0	9	2	2	5	17	6	9	2	10
·324	·306	·315	81	83	82	6·6	5·5	6·1	3·365	·586	22nd	16	0	3	0	4	11	5	2	2	3	1	5	·13	32	4	0
·377	·325	·331	89	93	91	6·4	5·4	5·9	6·470	1·350	28th	20	0	2	1	5	9	0	3	0	4	1	5	12	10	1	26
·304	·288	·296	89	92	91	7·5	5·7	6·6	8·480	1·800	28th	21	0	3	0	3	12	2	2	0	9	3	3	19	5	10	11
·326	·308	·317	81	87	84	6·5	4·2	5·4	2·460	·450	28th	16	0	1	0	5	6	2	5	6	3	2	4	19	16	2	5
·330	·311	·321	89	89	89	8·5	7·3	7·9	4·576	·882	14th	28	0	2	1	0	20	0	1	3	2	14	10	10	7	8	7
·322	·307	·315	85	86	85	6·2	4·1	5·2	2·153	·639	15th	16	1	1	0	1	2	1	2	0	0	2	12	12	18	9	7
·344	·326	·335	92	93	92	8·3	7·1	7·7	3·502	·739	28th	21	0	1	1	1	18	0	1	1	1	8	15	15	9	2	10
·337	·322	·330	75	78	77	5·9	4·3	5·1	2·614	·534	27th	19	0	0	0	5	5	0	3	13	6	3	8	9	11	5	4

TABLE C., OCTOBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS during the Month of OCTOBER 1877. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.								TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of								
				Means of			Absolute Extremes.																									
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
		ins.	°	°	°	°	°		°		in.	%		ins.	ins.																	
0. SCOTLAND, N.	Sumburgh Head	29·671	45·7	40·8	50·2	45·5	30	17th	56	6th	0·253	83	7·0	3·68	0·59	29th	26	1	1	1	1	9	9	4	3	0	5	4	4	5	5	1
	Thurso	29·694	43·7	39·0	53·5	46·3	28	20th	66	5th	·265	92	6·9	4·17	0·62	11th	24	4	2	0	7	14	2	1	0	0	4	10	7	3	4	2
	Wick	29·707	44·8	38·4	52·2	45·3	27	19th	59	4th, 5th 6th.	·260	88	7·8	2·63	0·33	12th	19	2	0	0	5	20	3	1	1	0	4	8	5	5	5	2
	Stornoway	29·687	45·5	39·5	50·1	44·8	29	25th	58	3rd	·280	92	7·9	7·93	2·12	14th	26	4	4	2	3	21	9	2	1	2	2	4	9	7	4	0
1. SCOTLAND, E.	Nairn	29·726	43·5	39·8	51·7	45·8	30	25th, 26th	61	5th	·237	84	7·5	3·16	0·83	14th	17	2	1	0	3	16	4	1	0	1	0	0	0	5	7	17
	Aberdeen	29·755	44·3	40·0	52·2	46·1	29	19th	63	6th	·251	86	4·8	2·14	0·40	29th	18	1	0	0	12	8	5	3	0	0	0	9	7	5	2	5
	Leith	29·801	46·5	41·5	55·3	48·4	32	17th, 18th	65	14th	·281	89	6·4	2·31	0·54	23rd	20	0	3	0	7	13	2	0	1	2	2	2	9	11	2	2
2. ENGLAND, N.E.	Shields	29·881	46·7	43·3	54·3	48·8	30	18th, 19th	62	13th, 14th	·274	87	6·0	2·42	0·61	23rd	17	0	2	0	9	15	7	1	1	0	1	3	10	10	3	2
	Scarborough	29·916	47·8	44·3	53·2	48·8	31	18th	63	14th	·283	86	5·9	2·01	0·35	23rd	15	0	1	0	9	11	3	1	1	1	1	4	12	9	2	0
	York	29·935	45·5	40·4	55·8	48·1	27	18th	65	14th	·272	90	5·7	2·92	0·62	23rd	19	0	0	0	10	12	4	3	1	1	2	8	5	6	5	0
3. ENGLAND, E.	Yarmouth	29·992	48·7	43·8	54·7	49·3	28	18th	62	14th	·301	88	3·0	1·41	0·43	29th	11	0	0	0	19	1	5	2	1	4	0	4	8	8	4	0
	Cambridge	30·010	45·4	39·6	58·2	48·9	28	18th	70	14th	·271	90	6·0	1·34	0·25	29th	13	0	0	1	10	13	0	6	0	0	0	6	14	1	4	0
4. MIDLAND COUNTIES.	Nottingham	29·991	45·4	39·8	57·4	48·6	30	18th	69	14th	·273	91	6·7	2·19	0·45	19th	16	0	0	1	6	14	3	3	0	0	2	8	7	1	2	8
	Oxford	30·021	45·2	40·8	57·3	49·1	28	18th, 19th	68	14th	·260	87	7·2	1·58	0·26	29th	13	0	0	0	8	18	1	1	1	0	2	4	8	4	0	11
5. ENGLAND, S.	London	30·035	46·2	41·5	57·3	49·4	32	18th, 19th	66	13th, 14th	·274	89	5·5	1·73	0·30	25th	13	0	0	0	11	10	2	1	2	0	1	3	4	9	2	9
	Dover	30·036	50·6	46·9	56·0	51·5	36	18th, 19th	61	14th	·305	83	3·4	3·02	0·74	25th	13	0	0	0	13	1	1	4	1	2	1	2	8	8	5	0
	Hurst Castle	30·044	51·2	44·9	58·4	51·7	35	18th, 19th	66	14th	·353	94	4·3	2·65	0·52	24th	16	0	0	0	16	10	0	3	8	1	0	2	6	5	6	0
6. SCOTLAND, W.	Ardrossan	29·813	48·5	44·8	55·1	50·0	33	18th	61	1st, 3rd, 6th.	·285	84	7·2	6·27	0·81	23rd	21	0	2	0	2	15	6	2	4	4	3	4	6	3	5	0
7. ENGLAND, N.W.	Liverpool	29·934	48·4	45·1	55·8	50·5	38	16th	69	14th	·307	91	6·6	3·92	0·99	26th	20	0	0	0	4	13	4	2	1	0	11	7	2	7	1	0
	Holyhead	29·924	51·0	47·7	56·3	52·0	40	18th	63	14th	·326	87	7·5	4·83	1·10	28th	21	0	2	0	3	14	3	1	0	0	0	8	12	6	4	0
8. ENGLAND, S.W.	Pembroke	29·979	52·6	49·7	56·3	53·0	41	18th	62	14th	·337	85	6·8	3·73	0·71	28th	20	0	1	0	7	14	9	1	0	6	3	3	8	4	6	0
	Portishead	30·013	48·3	42·7	58·7	50·7	30	18th	68	14th	·306	91	5·6	3·34	0·54	24th, 29th	14	0	1	1	9	10	7	2	2	2	2	3	8	7	1	4
	Plymouth	30·044	49·7	44·5	58·4	51·5	32	17th	65	14th	·326	92	5·6	2·37	0·37	20th, 28th	15	0	0	0	11	15	4	0	2	5	0	4	7	5	2	6
9. IRELAND, N.	Greencastle	29·804	48·5	44·3	55·3	49·8	32	18th	65	1st	·306	90	8·3	5·85	0·80	14th	25	0	0	1	1	19	1	3	3	1	2	8	7	6	1	0
	Donaghadee	29·859	48·1	43·8	54·0	48·9	32	18th	62	13th	·329	98	6·7	3·62	0·61	24th	21	0	0	0	5	12	1	1	0	2	1	7	10	8	2	0
10. IRELAND, S.	Kingstown	29·915	50·8	47·3	56·5	51·9	38	16th	63	4th, 13th, 14th, 30th.	·311	83	6·4	2·11	0·48	15th	18	0	0	0	3	6	3	0	0	0	3	10	3	9	3	3
	Valencia	29·922	53·2	48·4	58·7	53·6	38	17th	65	1st	·344	85	7·3	6·95	1·32	14th	21	0	4	3	0	11	7	2	1	0	5	5	5	6	3	4
	Roche's Point	29·954	51·8	48·2	57·9	53·1	36	17th	64	3rd, 4th	·336	86	6·6	6·45	1·40	28th	17	0	1	1	5	11	5	3	1	0	4	5	5	10	3	0
CHANNEL	Scilly	30·040	55·6	52·8	58·2	55·5	46	17th, 18th	65	14th	·377	85	7·7	3·21	0·61	28th	16	0	0	1	2	15	7	1	2	4	3	5	6	5	4	1

MONTHLY WIND CHART FOR OCTOBER, 1877.


12
8
4
0
4
60
60
56
56
52
52
8
4
0

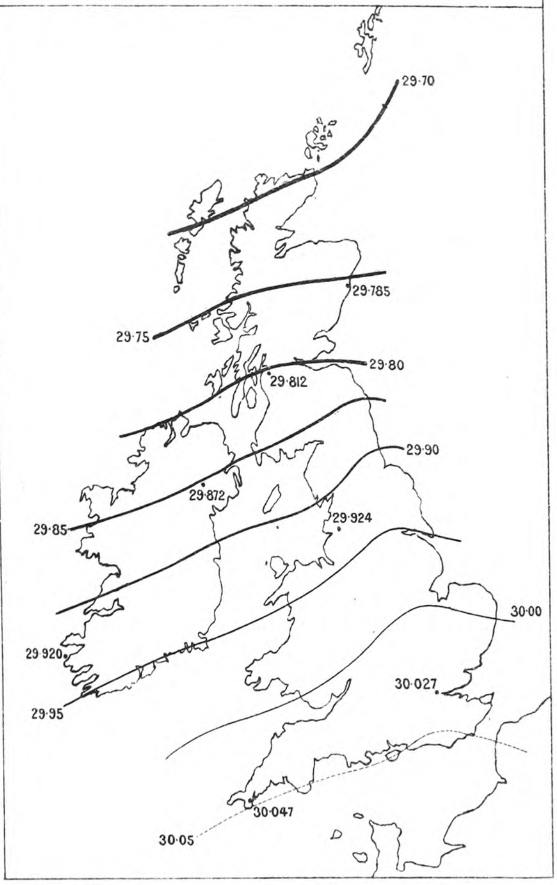
To face page 142.

DANGERFIELD LITH 22, BEDFORD ST COVENT GARDEN

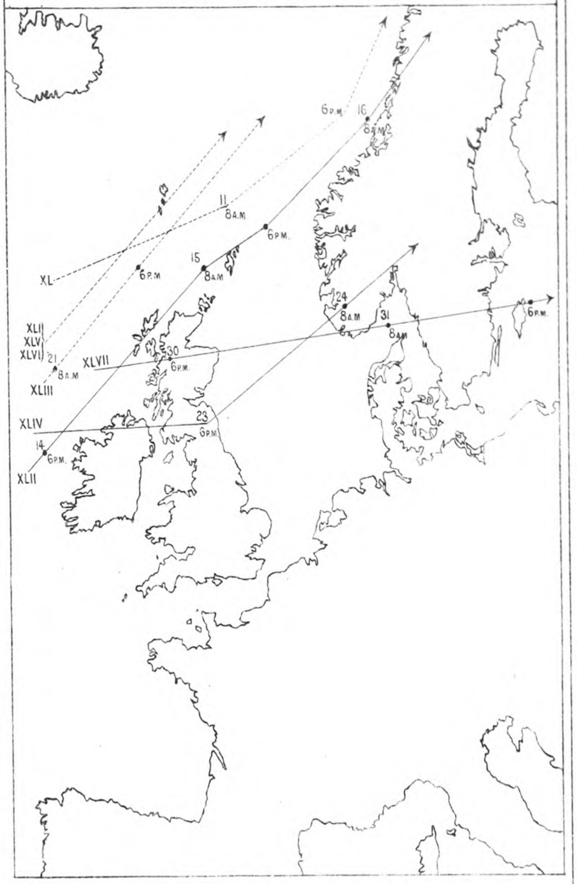
n.966

MONTHLY WEATHER CHART OCTOBER, 1877.

I. DISTRIBUTION OF MEAN PRESSURE


29·70
29·785
29·75
29·80
29·812
29·90
29·872
29·85
29·924
30·00
29·920
30·027
29·95
30·047
30·05

2. MOVEMENTS OF DEPRESSIONS.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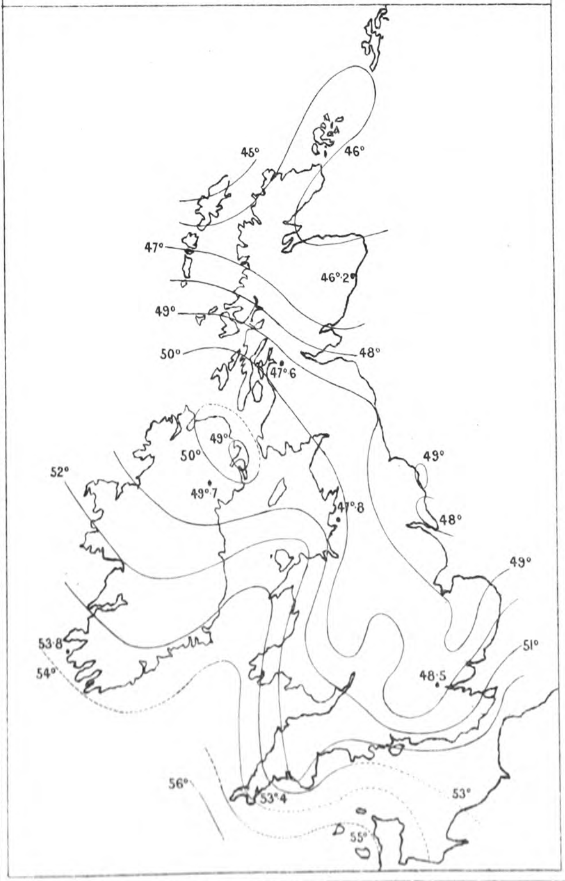
16
8A.M.
11
8A.M.
6P.M.
XL
6P.M.
15
8A.M.
24
8A.M.
31
8A.M.
6P.M.
XLI
XLV
XLVI
21
8A.M.
XLVII
30
6P.M.
XLIII
XLIV
23
6P.M.
14
6P.M.
XLII

3. DISTRIBUTION OF MEAN TEMPERATURE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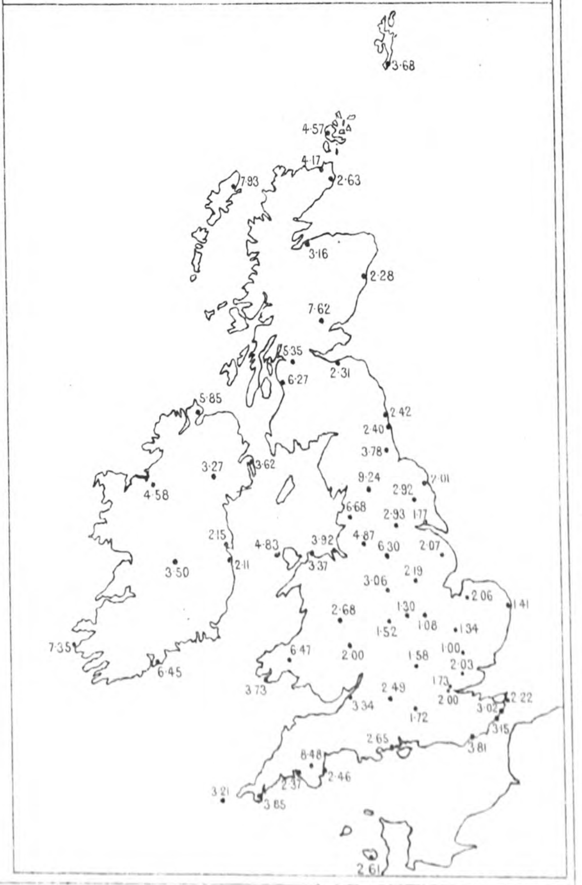
46°
47°
46°·2
49°
48°
50°
47°·6
49°
50°
49°
52°
49°·7
47°·8
48°
49°
53·8
51°
54°
48·5
56°
53°·4
53°
55°

4. RAINFALL


3·68
4·57
4·17
7·93
2·63
3·16
2·28
7·62
5·35
2·31
6·27
5·85
2·42
2·40
3·78
3·27
3·62
9·24
2·01
4·58
2·92
6·68
2·93
1·77
2·15
4·83
3·92
4·87
6·30
2·07
2·11
3·37
3·50
3·06
2·19
2·06
1·41
2·68
1·30
1·52
1·08
1·34
7·35
6·47
2·00
1·58
1·00
2·03
6·45
1·73
3·73
2·49
2·00
3·02
2·22
3·34
1·72
3·15
2·65
3·81
8·48
2·46
3·21
2·37
3·85
2·61

To follow Wind Chart for October.

[illegible] L TH. 22, BEDFORD ST COVENT GARDEN. [illegible]

REMARKS FOR NOVEMBER 1877.

(*Tables A. to C., November, with Monthly Wind and Weather Charts.*)

Wind.—Cyclonic winds prevailed throughout nearly the whole of the month, and South-west was therefore the predominant direction at nearly every station. The Westerly current with which the month opened soon backed to South-west and South, and throughout the first 19 days the direction constantly oscillated between South and West, and occasionally North-west, under the influence of a series of depressions which travelled past our northern coasts. At times, as on the 11th, the wind was very strong generally, while at others its force rose only over certain districts. North-westerly and Northerly winds were experienced generally on the 20th, and after a temporary retrograde movement to South-west on the 21st, it again veered and blew strongly from West and North-west on the 22nd. A brief interval of calms and light airs followed, and then for a short time the direction became Easterly, from which point it shifted again through North to South, which was the general direction on the 26th. From thence till the end of the month South-west was again the predominant direction, the wind varying somewhat with the passage of two or three depressions, and occasionally blowing with considerable force. On the 30th South-easterly winds were reported from the north-eastern coasts, but elsewhere West was the prevailing direction. The great predominance of South-westerly winds is clearly shown by the accompanying monthly chart.

Pressure.—The mean pressure for the month was everywhere very much below the average, the defect varying from half an inch in the north of Scotland, which is crossed by the isobar of 29·25 inches, to a quarter of an inch in the south of England, where the value of the mean isobar was 29·7 inches. The distribution, therefore, indicated steep gradients for South-westerly winds, which accorded with the winds observed. The range of pressure was likewise large, and at Armagh, where it was greatest, amounted to nearly 2·3 inches, while at Kew, where it was least, it equalled an inch and three quarters. Except at Kew, the barometer everywhere reached its highest point on the 1st, when a large anticyclonic area lay over southern England and the Channel. The maximum at Kew occurred under very similar conditions, but not until the 17th. The lowest point was everywhere reached on the 11th, with the very deep depression No. L., which skirted our north-western coasts on that day.

Movements of the Depressions.—Speaking generally, the depressions observed during the month, with one or two exceptions, travelled in a north-easterly direction, over or past our northern coasts, disappearing in some cases over the ocean to the westward of Norway. Of the exceptions one disturbance passed up the Channel to northern Germany, while another crossed Scotland, and then moved in a south-easterly direction down the North Sea, and finally disappeared over southern Europe.

Temperature.—The mean temperature was high over the greater part of England, especially over the central and eastern counties, and over southern Scotland, but elsewhere it did not differ greatly from the normal. The maxima were very generally under 60°, and occurred at irregular dates, the 15th and the 5th and 6th being the most general. The minima did not, as a rule, fall much below 30°, and in many cases they were considerably above that point. The lowest were recorded in the north and east of Scotland, and at Glenalmond the thermometer fell to 21°. As a rule the minima occurred on or about the 24th. The range of temperature was not large, and in no case did it much exceed 30°.

Vapour Tension.—The mean tension of vapour varied from a little more than two tenths of an inch in the north of Scotland, to about three tenths in the south of England. *Relative Humidity* was fairly uniform in its distribution, the differences being small and irregular.

Rainfall.—At some of the eastern stations the fall of rain was below the average, but in the north, west, and south, it was large. The greatest total was recorded at Dartmoor, where nearly 16 inches fell during the month, but at Valencia the fall amounted to nearly 10 inches, and at several other western stations to upwards of 7 inches. The maximum daily falls were large at a great number of stations, the 11th and 21st being the dates on which these were most generally recorded.

TABLE A.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of NOVEMBER 1877; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).						TEMPERATURE in the Shade (In Degrees Fahrenheit).						HYGROMETRIC VALUES.		RAINFALL (In English Inches).
	Mean for the Month.	Extremes.				Range.	Mean for the Month.	Extremes.				Range.	Tension of Vapour (In English Inches).	Relative Humidity (Saturation=100).	
		Minimum.		Maximum.				Minimum.		Maximum.					
		Reading.	Date.	Reading.	Date.			Reading.	Date.	Reading.	Date.				
	ins.	ins.	D. H.	ins.	D. H.	ins.	°	°	D. H.	°	D. H.	°	in.	%	ins.
Valencia - -	29·565	28·349	11th, Noon	30·438	1st, 1 a.m.	2·089	48·5	38·7	27th, Midt.	56·1	15th, 8 p.m.	17·4	·279	82	10·437
Armagh - -	·468	·208	11th, 4 p.m.	·400	1st, 10 a.m.	2·192	43·3	31·4	24th, 6 a.m.	55·9	15th, 9 p.m.	24·5	·248	88	3·655
Glasgow - -	·392	·169	11th, 5 p.m.	·281	1st, 11 a.m.	2·112	43·3	30·9	25th, 0.3 a.m.	56·3	15th, 11 p.m.	25·4	·239	85	6·585
Aberdeen - -	·365	·286	11th, 8 p.m.	·195	1st, Noon	1·909	42·8	28·0	24th, 8 a.m.	56·5	16th, 1 a.m.	28·5	·225	82	5·385
Falmouth - -	·709	·600	11th, 6 p.m.	·515	1st, 11 a.m.	1·915	49·3	39·6	24th, 8 p.m.	56·9	9th, 1 p.m.	17·3	·292	83	8·345
Stonyhurst - -	·539	·474	11th, 7 p.m.	·386	1st, Noon	1·912	44·0	31·2	25th, 7 a.m.	57·0	16th, 0·15 a.m.	25·8	·246	85	7·093
Kew - -	29·689	28·717	11th, 11 p.m.	30·474	17th, 1 a.m.	1·757	45·5	29·0	4th, 4 a.m.	58·0	16th, 11 a.m.	29·0	·262	86	3·490

TABLE B., NOVEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at The values are not

(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	AIR TEMPERATURE.									
						Means of			Absolute Extremes.			
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N. -	Sandwick Manse (Orkneys) -	ins. 29·251	42°·7	42°·6	42°·7	39°·8	46°·7	43°·3	30°·0	24th	53°·0	2nd
1. SCOTLAND, E. -	Glenalmond† - - -	—	—	—	—	34·1	45·5	39·8	21·0	23rd	54·5	1st
2. ENGLAND, N.E. -	Seaham - - -	29·470	43·9	43·6	43·8	39·0	49·7	44·4	31·7	21st	59·2	6th
	Durham* - - -	29·480	43·7	42·1	42·9	37·8	49·0	43·4	29·5	24th	58·9	6th
	Hull - - - -	29·578	43·5	43·7	43·6	38·7	49·7	44·2	30·0	24th	58·5	7th, 9th
	Kelstern 𝔐 - - -	29·599	41·6	41·2	41·4	36·6	48·4	42·5	29·2	24th	56·0	7th
3. ENGLAND, E. -	Hillington 𝔐 - - -	29·625	42·8	42·3	42·6	36·4	49·9	43·2	25·3	24th	57·7	6th
	Audley End 𝔐 - -	29·685	43·5	43·2	43·4	36·6	51·2	43·9	27·3	4th	58·0	5th, 6th
	Chigwell Row - - -	29·714	44·7	44·9	44·8	39·4	51·0	45·2	32·2	26th	57·5	6th
4. MIDLAND COUNTIES.	Wakefield 𝔐 - - -	29·567	44·2	45·0	44·6	39·6	51·6	45·6	28·2	24th	60·2	16th
	Buxton 𝔐 - - -	29·595	41·7	41·5	41·6	37·0	—	—	27·7	24th	—	—
	Cheadle 𝔐 - - -	29·605	41·1	42·3	41·7	36·6	48·0	42·3	29·4	25th	55·1	15th
	Leicester - - -	29·623	44·0	44·4	44·2	39·4	51·1	45·3	32·0	14th	57·9	9th
	Uppingham - - -	29·632	42·6	42·2	42·4	37·5	49·3	43·4	31·4	24th	57·1	6th
	Oscott - - - -	29·606	42·5	42·5	42·5	38·3	49·8	44·1	31·0	25th	57·0	9th
	Churchstoke 𝔐 - -	29·615	43·4	43·8	43·6	38·7	50·3	44·5	30·5	25th	57·4	15th
	Hereford 𝔐 - - -	29·624	44·3	44·1	44·2	38·7	52·0	45·4	30·8	14th	57·9	9th
5. ENGLAND, S. -	Marlborough 𝔐 - -	29·690	43·3	43·1	43·2	38·1	51·5	44·8	31·2	26th	57·4	1st
	Strathfield Turgiss 𝔐 -	29·696	44·8	43·7	44·3	37·4	52·4	44·9	28·8	17th	58·2	6th
	Ramsgate 𝔐 - - -	29·711	47·1	46·8	47·0	41·5	52·7	47·1	32·5	26th	59·1	5th
	Folkestone - - -	29·719	48·2	47·4	47·8	41·6	52·8	47·2	33·0	26th	58·8	5th
	Hastings - - -	29·730	47·9	48·1	48·0	42·8	52·6	47·7	32·7	26th	59·1	16th
6. SCOTLAND, W. -	——	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND, N.W. -	Hawes 𝔐 - - -	29·536	41·3	42·1	41·7	38·2	46·6	42·4	28·3	24th	55·5	16th
	Prestwich - - -	29·551	42·3	43·6	43·0	39·0	49·3	44·2	30·5	25th	57·2	15th
	Llandudno 𝔐 - - -	29·537	46·8	47·0	46·9	42·9	52·4	47·7	35·0	24th	62·0	15th
8. ENGLAND, S.W. -	Caermarthen 𝔐 - -	29·612	46·4	45·8	46·1	39·6	53·2	46·4	29·9	14th	59·2	5th
	Dartmoor 𝔐 - - -	29·709	43·3	42·5	42·9	37·8	47·8	42·8	31·5	25th	52·6	6th, 15th
	Babbacombe 𝔐 - -	29·699	47·4	45·5	46·5	41·3	53·7	47·5	34·6	17th	60·0	1st
9. IRELAND, N. -	Markree Castle - -	29·447	42·5	42·9	42·7	37·2	49·5	43·4	29·8	29th	57·1	15th
10. IRELAND, S. -	Dublin - - - -	29·527	44·5	45·6	45·1	40·8	51·1	46·0	32·9	24th	60·4	15th
	Parsonstown - - -	29·532	42·9	43·1	43·0	37·8	50·4	44·1	29·2	24th	57·8	15th
CHANNEL - -	Jersey (St. Aubin's) - -	29·810	51·4	50·2	50·8	46·6	54·9	50·8	41·5	20th, 26th	59·8	6th

NOTE.—The stations marked thus 𝔐 are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† The return for this station was incomplete.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of NOVEMBER 1877.
corrected for Diurnal Range.
beginning in each case with the Station lying furthest North.)

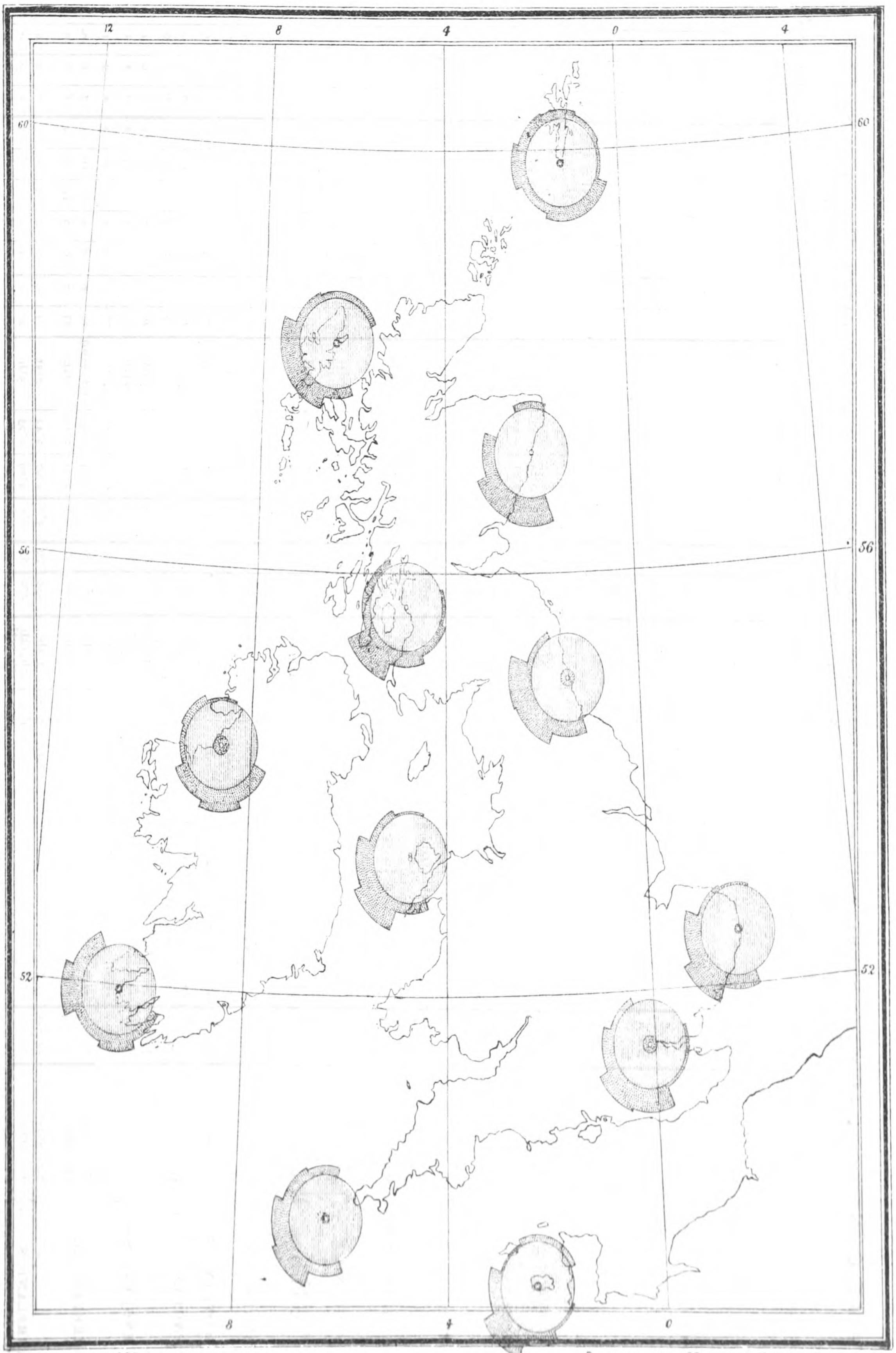
TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10).			RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	%	%	%				ins.	ins.																	
·234	·240	·237	86	88	87	5·9	6·4	6·2	7·000	1·220	29th	25	2	1	0	3	10	8	1	0	1	6	17	9	13	9	4
—	—	—	—	—	—	—	—	—	5·760	1·000	15th	20	1	0	0	—	—	—	—	—	—	—	—	—	—	—	—
·245	·250	·248	85	88	87	3·9	4·7	4·3	1·505	·270	21st	16	0	0	0	6	2	0	0	1	0	0	25	17	12	3	2
·236	·237	·237	83	87	85	5·2	6·3	5·8	3·060	·747	11th	17	0	0	0	3	9	0	0	1	0	3	28	15	9	4	0
·249	·262	·256	88	92	90	5·6	3·9	4·8	1·790	·350	21st	18	0	0	0	7	6	1	0	1	0	2	11	24	4	4	14
·244	·246	·245	91	93	92	5·0	4·4	4·7	2·729	·510	11th	18	0	0	0	8	5	2	1	1	0	3	14	29	9	3	0
·261	·259	·260	93	94	94	6·3	5·0	5·7	3·393	·965	11th	19	0	1	0	5	9	2	0	1	0	2	9	35	4	9	0
·268	·267	·268	92	93	93	6·0	3·2	4·6	3·160	·850	11th	23	0	1	1	7	7	0	0	2	0	2	6	25	8	8	9
·269	·271	·270	91	91	91	7·8	6·1	7·0	3·020	·510	27th	19	0	1	2	3	14	0	1	0	5	5	10	28	2	3	6
·247	·258	·253	84	85	85	4·9	5·0	5·0	2·170	·460	21st	19	0	5	1	5	7	1	0	1	0	2	11	17	10	0	19
·235	·239	·237	88	90	89	7·3	7·4	7·4	8·235	·970	30th	24	3	2	1	0	12	0	2	0	1	0	2	13	26	16	0
·238	·246	·242	92	91	92	7·6	6·4	7·0	3·480	·380	21st	23	0	0	0	2	11	1	0	2	0	1	18	21	9	4	5
·248	·253	·251	86	87	87	6·8	4·5	5·7	2·540	·460	11th	21	0	0	0	5	8	4	0	2	0	2	6	31	7	10	2
·252	·255	·254	91	93	92	6·7	5·7	6·2	2·514	·335	11th	19	0	0	0	4	11	8	1	1	0	1	16	21	12	5	3
·252	·259	·256	91	93	92	7·1	4·9	6·0	2·580	·620	11th	19	0	0	0	6	10	5	0	2	0	2	24	18	9	3	2
·252	·259	·256	89	89	89	5·9	6·0	6·0	4·409	1·009	11th	20	1	2	1	2	6	1	0	1	2	3	16	20	8	2	8
·259	·257	·258	88	88	88	6·2	4·9	5·6	2·840	·994	11th	27	2	0	1	3	7	0	1	1	0	0	13	10	7	3	25
·263	·265	·264	92	93	93	7·1	4·7	5·9	7·016	1·645	11th	23	0	1	1	5	10	2	0	1	1	1	6	25	15	0	11
·265	·264	·265	88	91	89	6·4	5·2	5·8	5·153	·980	11th	22	0	2	3	5	11	0	0	2	0	1	10	16	12	7	12
·290	·289	·290	88	89	89	5·9	5·8	5·9	4·650	1·262	29th	21	0	2	0	4	10	8	0	1	0	3	4	35	8	4	5
·301	·297	·299	89	91	90	6·6	6·1	6·4	5·690	1·210	24th	24	0	2	2	5	13	8	3	0	0	2	21	8	19	5	2
·292	·292	·292	86	86	86	6·4	6·1	6·3	7·390	1·325	24th	24	0	3	2	7	15	12	2	3	1	1	13	21	13	4	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·226	·238	·232	86	88	87	7·9	7·8	7·9	11·560	1·610	21st	26	4	3	1	2	18	0	0	0	1	1	5	23	19	3	8
·249	·259	·254	92	91	92	6·5	6·6	6·6	6·430	1·140	30th	23	0	3	2	1	9	0	0	3	0	8	23	9	8	3	6
·264	·267	·266	82	83	83	7·4	5·3	6·3	6·350	·890	11th	22	0	4	1	3	11	1	0	0	1	0	9	18	25	7	0
·291	·297	·294	91	95	93	6·5	6·8	6·7	8·630	·870	11th	26	3	4	1	0	8	0	1	0	2	0	3	23	11	3	17
·261	·261	·261	92	94	93	7·9	7·1	7·5	15·800	2·410	11th	25	3	3	2	1	13	7	2	1	1	2	6	17	9	15	7
·292	·280	·286	88	91	89	6·2	5·7	6·0	7·540	1·250	11th	25	1	4	1	1	7	4	1	1	1	0	5	28	18	3	3
·246	·251	·249	90	90	90	7·4	7·7	7·6	4·916	·451	2nd	30	1	3	0	0	15	0	2	0	1	7	14	14	7	6	9
·246	·262	·254	83	85	84	5·3	5·7	5·5	2·438	·569	21st	22	0	1	0	2	3	1	0	1	0	0	7	24	22	2	4
·256	·265	·261	91	93	92	6·8	7·2	7·0	5·435	·758	11th	29	0	0	0	2	14	0	0	0	0	7	11	27	9	3	3
·308	·306	·307	81	84	82	7·3	6·6	7·0	6·100	·740	11th	28	0	6	1	4	14	4	4	3	1	1	6	28	11	4	2

TABLE C., NOVEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of NOVEMBER 1877. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.								TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
				Means of			Absolute Extremes.																									
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
		ins.	°	°	°	°	°		°		in.	%		ins.	ins.																	
0. SCOTLAND, N.	Sumburgh Head	29·251	43·6	39·3	46·9	43·1	30	25th	52	15th	0·228	79	6·6	6·81	0·83	6th	27	0	0	0	3	10	9	3	2	1	5	5	3	6	4	1
	Thurso	29·273	40·9	36·1	48·4	42·3	26	24th	55	1st, 5th, 9th.	·230	91	6·1	5·51	0·80	22nd	27	1	1	0	4	7	6	1	0	0	3	11	8	4	2	1
	Wick	29·295	42·4	36·9	48·0	42·5	25	24th	54	1st	·229	85	6·5	3·60	0·77	6th	22	1	0	0	4	10	7	1	0	1	1	11	11	3	2	0
	Stornoway	29·258	39·6	34·9	45·3	40·1	28	24th	52	1st, 2nd, 15th.	·221	91	6·0	8·02	0·79	2nd	30	1	2	1	8	10	11	2	2	0	0	4	9	9	3	1
1. SCOTLAND, E.	Nairn	29·328	40·9	36·8	46·5	41·7	28	25th	57	15th	·211	83	6·0	2·98	0·80	19th	20	1	1	0	4	9	7	0	0	0	3	0	4	7	4	12
	Aberdeen	29·351	41·6	37·5	47·6	42·6	28	24th, 25th	57	15th	·224	85	2·7	5·04	0·95	19th	22	0	1	0	21	6	8	2	0	0	0	12	11	5	0	0
	Leith	29·412	43·1	38·6	50·0	44·3	28	24th, 25th	60	15th	·239	85	5·3	1·77	0·45	21st	19	0	0	0	6	6	1	1	0	0	1	3	17	7	1	0
2. ENGLAND, N.E.	Shields	29·501	42·9	39·2	49·4	44·3	31	25th	58	6th	·233	84	5·4	1·23	0·22	21st	15	0	0	0	12	12	13	0	0	0	0	5	10	11	2	2
	Scarborough	29·550	43·1	40·2	48·8	44·5	33	21st, 26th	57	5th, 6th	·241	86	5·5	1·86	0·55	21st	16	0	0	0	9	8	3	0	0	0	0	4	11	12	3	0
	York	29·571	41·8	37·5	50·2	43·9	30	25th, 26th	59	15th	·241	92	5·2	2·17	0·53	21st	18	0	0	0	12	11	2	0	0	0	1	13	9	5	2	0
3. ENGLAND, E.	Yarmouth	29·673	43·6	39·4	50·1	44·8	30	26th	57	6th, 16th	·266	93	5·2	3·03	0·80	27th	22	0	0	0	13	9	4	1	0	0	0	5	13	8	2	1
	Cambridge	29·680	41·6	36·5	52·7	44·6	30	24th	60	6th	·246	94	6·2	2·92	0·64	11th	21	0	2	0	7	10	1	0	0	0	1	11	14	1	2	1
4. MIDLAND COUNTIES.	Nottingham	29·635	41·7	36·4	50·4	43·4	28	25th	59	6th	·242	92	7·0	2·67	0·48	11th	22	2	0	1	7	17	4	0	0	0	1	12	9	2	2	4
	Oxford	29·688	43·6	39·0	51·6	45·3	33	24th, 26th	58	5th, 6th	·255	89	6·9	3·70	0·94	11th	20	0	0	0	7	15	1	0	0	0	0	8	7	7	1	7
5. ENGLAND, S.	London	29·708	44·3	38·9	52·9	45·9	31	4th, 17th, 26th.	60	8th	·259	89	6·6	3·45	0·91	11th	21	0	0	1	6	11	6	0	0	1	1	9	10	5	2	2
	Dover	29·739	47·7	43·9	52·2	48·1	35	26th	57	6th, 16th	·280	85	5·0	5·92	1·45	24th	23	0	3	1	8	5	3	2	1	0	0	5	10	9	3	0
	Hurst Castle	29·708	49·0	42·5	53·7	48·1	32	14th	65	27th	·320	92	5·9	7·59	1·70	24th	25	0	0	1	8	13	1	1	1	0	1	4	9	9	5	0
6. SCOTLAND, W.	Ardrossan	29·414	46·8	42·8	47·8	45·3	33	25th	57	15th	·259	81	6·1	6·73	0·73	11th	27	0	2	0	5	10	9	0	0	1	2	5	15	4	3	0
7. ENGLAND, N.W.	Liverpool	29·568	44·4	41·6	50·5	46·1	34	24th, 25th	60	15th	·250	86	6·5	5·00	0·95	30th	24	0	0	0	6	11	2	0	0	0	4	9	8	7	2	0
	Holyhead	29·553	46·8	44·3	51·3	47·8	37	24th, 25th	56	5th, 6th, 15th.	·270	86	5·9	8·03	1·38	28th	25	0	2	3	6	7	7	1	0	0	0	4	13	9	3	0
8. ENGLAND, S.W.	Pembroke	29·625	50·1	47·6	52·5	50·1	40	25th	56	5th, 6th	·294	81	6·3	5·16	0·79	11th	26	0	0	0	1	9	11	0	0	1	0	5	10	6	8	0
	Portishead	29·669	46·3	41·1	53·0	47·1	35	25th, 26th	59	6th, 9th, 15th.	·276	89	6·1	5·84	1·05	24th	25	0	0	1	8	14	8	0	1	1	0	7	12	7	1	1
	Plymouth	29·719	46·3	42·2	53·7	48·0	34	14th, 26th	63	10th	·288	92	6·8	6·63	0·86	26th	25	0	2	1	5	16	6	1	3	1	0	2	9	5	5	4
9. IRELAND, N.	Greencastle	29·404	42·0	38·5	48·5	43·5	33	24th, 29th	56	15th	·239	90	7·7	6·94	0·97	21st, 22nd	29	0	0	0	3	16	1	3	0	0	0	8	8	9	2	0
	Donaghadee	29·473	41·0	37·4	47·7	42·6	30	24th, 25th	55	15th	·248	97	4·5	3·73	0·59	11th	23	0	0	0	11	5	4	1	0	0	0	7	7	14	1	0
10. IRELAND, S.	Kingstown	29·544	45·5	42·5	50·5	46·5	37	29th	59	15th	·239	79	4·8	1·97	0·42	21st	23	0	0	0	9	5	7	0	0	0	2	10	3	12	3	0
	Valencia	29·585	47·6	43·8	53·1	48·5	38	25th, 28th	57	5th, 6th, 14th, 15th.	·270	83	6·5	9·69	0·73	5th	30	0	4	3	1	7	13	0	0	0	3	6	4	10	6	1
	Roche's Point	29·610	46·2	42·7	51·7	47·2	37	24th	57	1st, 4th, 5th.	·276	89	5·4	6·50	0·84	11th	27	0	1	0	10	10	10	1	0	1	0	1	5	15	7	0
CHANNEL	Scilly	29·728	51·9	48·0	54·5	51·3	42	12th, 30th	59	1st	·316	82	8·5	6·87	0·78	24th	27	0	3	1	0	15	11	3	0	0	0	4	10	8	4	1

MONTHLY WIND CHART FOR NOVEMBER 1877.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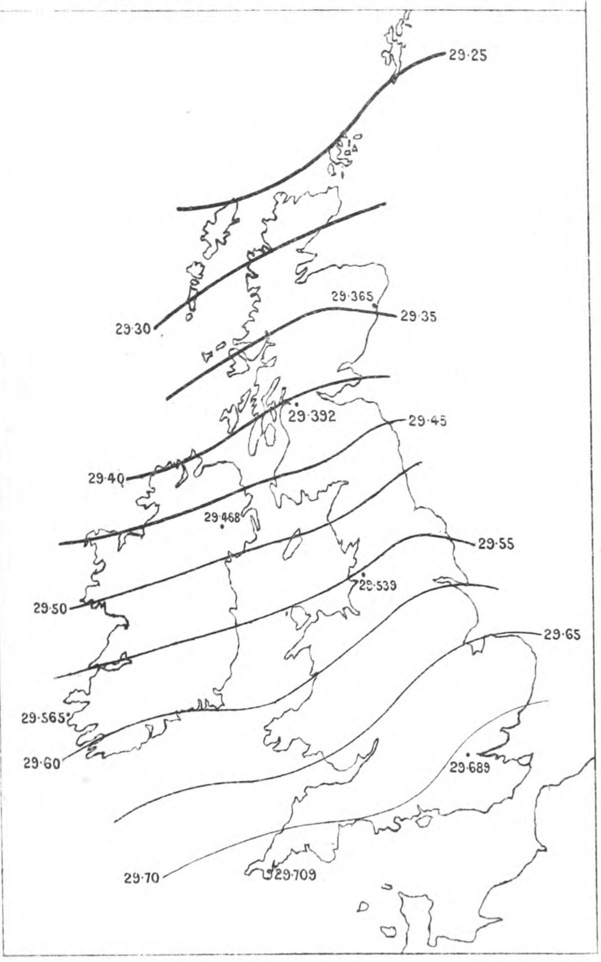
To face page 148.

DANGERFIELD, LITH. 22, BEDFORD S^T COVENT GARDEN.

MONTHLY WEATHER CHART NOVEMBER, 1877.

1. DISTRIBUTION OF MEAN PRESSURE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29·709

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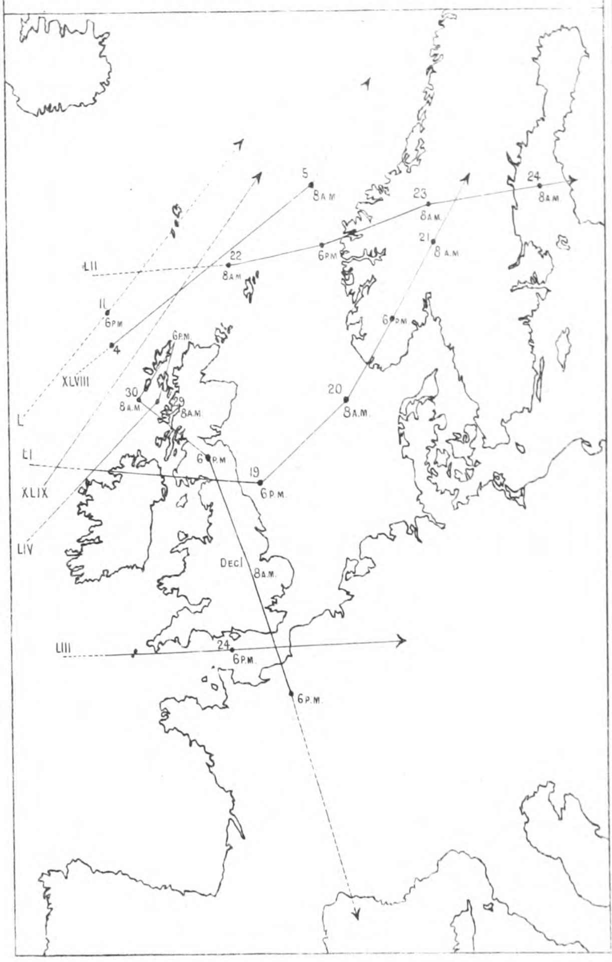
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XLVIII
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29
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L
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6 P.M.
19
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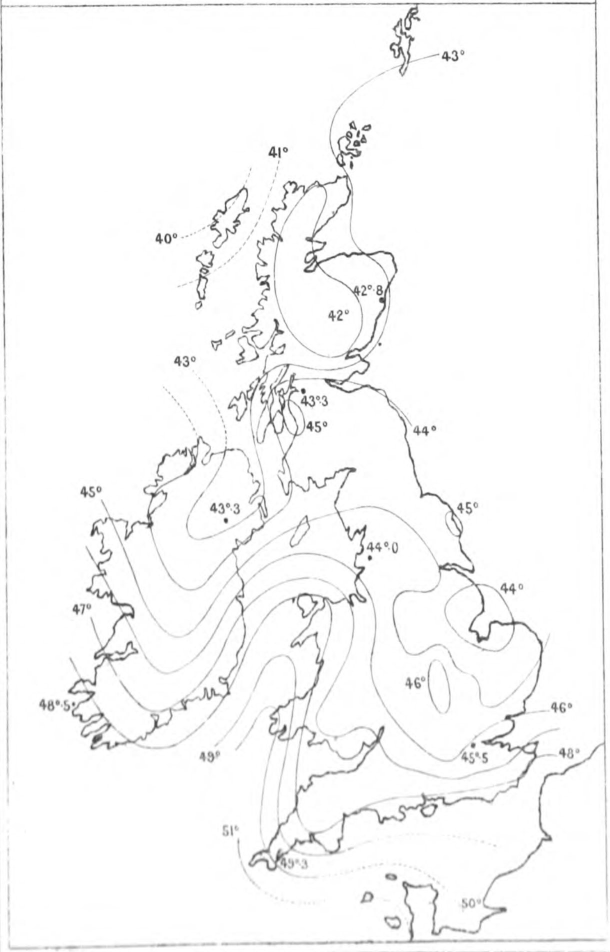
3. DISTRIBUTION OF MEAN TEMPERATURE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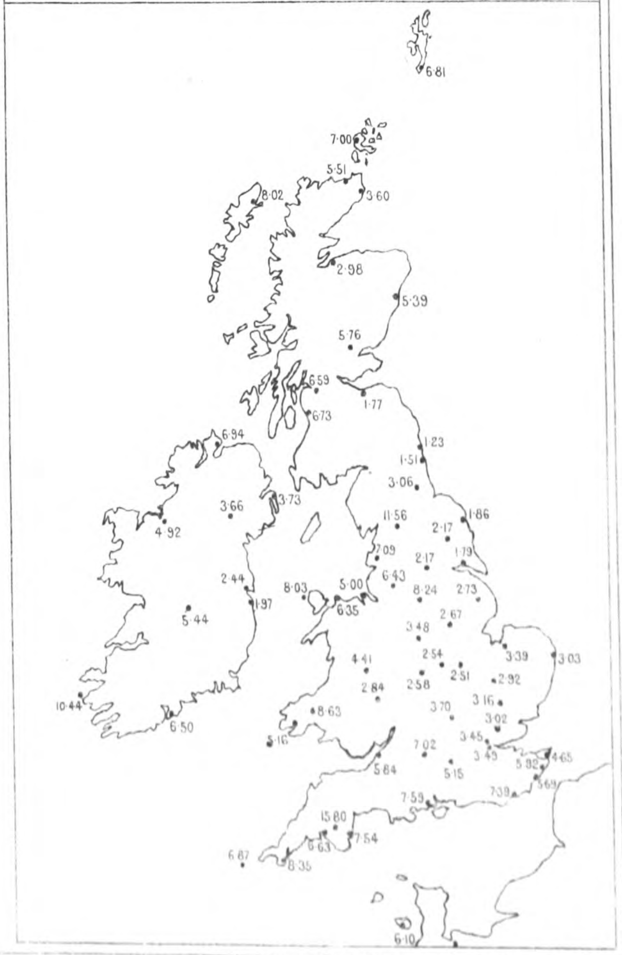
4. RAINFALL


6·81
7·00
5·51
8·02
3·60
2·98
5·39
5·76
6·59
1·77
6·73
6·94
1·23
1·51
3·06
3·66
3·73
11·56
1·86
4·92
2·17
7·09
2·17
1·79
2·44
6·43
1·97
8·03
5·00
8·24
2·73
6·35
5·44
2·67
3·48
4·41
2·54
3·39
3·03
2·51
2·84
2·58
2·92
10·44
8·63
3·70
3·16
6·50
3·02
5·16
7·02
3·45
3·45
5·84
5·15
5·82
4·65
5·69
7·59
7·39
15·80
7·54
6·63
6·87
8·35
6·10

To follow Wind Chart for November.

DANGERFIELD, LITH. 22, BEDFORD ST. COVENT GARDEN. 10907.

Remarks for December 1877.

(*Tables A. to C., December, with Monthly Wind and Weather Charts.*)

Wind.—On the morning of the 1st a moderate Westerly wind was observed over the greater part of the kingdom, the exception being in the south-east, where for a little while it blew from the Southward. A general veering of the wind was, however, in progress, and by the following morning it had become North-easterly, and was light to moderate in force. A light Southerly air was reported from the western stations on the 3rd, but as a rule the wind was then variable in direction and light in force, and continued so until the 5th, on the afternoon of which day the Southerly wind freshened, rising to a gale in the west, and later on in the north and east also. The next day it veered to West over England and Ireland, but in Scotland it continued to blow from the Southward, and from the Orkneys a strong South-east gale was reported. This was followed by a short interval in which light or moderate Westerly winds prevailed, but at the close of the 8th a fresh retrograde movement began, and on the 9th the general direction had again become Southerly, while for a short time the force in the west increased to a gale. Light and somewhat variable winds were common on the 10th over England and Ireland, but on the 11th strong Southerly winds were once more blowing on all the western and northern coasts. On the 12th they veered to the Westward, and at the close of the day moderated, and from thence until the 19th West was the prevailing direction, although in the south-west it veered rather more, and for a time blew from between West and North. An interval of light and variable anticyclonic airs then ensued, but the Westerly current soon reasserted itself, and spreading southwards again, became general by the close of the 20th. On the 21st the wind backed, and the movement was followed by a considerable increase of force from South or South-west at the northern stations. This change was, however, only of short duration, and veering again, the wind continued to blow from between West and North for several days. The next important change occurred on the 28th, when a Southerly current once more showed itself over Ireland; and extending eastwards became general by the close of the day. From thence till the 30th the direction varied between South and West, and on the latter day it veered as far as North-west, with a general decrease in force, the month closing with a light Westerly air blowing in all parts of the kingdom.

Speaking generally, the Westerly current strongly predominated during the month, the largest percentages as shown by the monthly chart being, as a rule, for points between South-west and North-west. Easterly winds were very little experienced, and it was only at a few stations that the percentage of Northerly or Southerly winds was at all considerable.

Pressure.—The mean for the month was nearly normal both as regards amount and distribution, varying from 29·7 inches in the north of Scotland to 30·1 inches at the mouth of the Channel, indicating moderate gradients for Westerly winds. The range of pressure was less than in November or October, and only amounted to 1·7 inches at Stonyhurst, where it was greatest. Except at Valencia, the lowest readings were everywhere observed very early on the 1st, in connection with depression No. LIV., the centre of which travelled south-eastwards from Scotland to France; the minimum was recorded at Valencia on the 6th, with depression No. LV. The maxima occurred at all stations at the close of the 19th or beginning of the 20th, at which time a large anticyclone lay over Great Britain.

Movements of the Depressions.—Fewer cyclonic disturbances were experienced during this month than in either of the two preceding months of the quarter, and at the same time there was more diversity in the tracks which they followed. The first system observed travelled in a south-easterly direction from Scotland to France. Others moved eastwards, one passing over central England to the Continent, and another over northern Scotland to the

Sound and thence to the Baltic, while the remainder skirted our northern coasts and pursued a northerly or north-easterly course. A large anticyclone lay over the kingdom during several days in the middle of the month.

Temperature.—The mean temperature of the month was nearly normal. The mean isotherm of 39° embraced nearly the whole of the northern half of Scotland, and from thence the values increased southwards to 49° at Scilly. The lowest temperatures were generally registered on or about the 26th, when the thermometer fell to below 20° at several Scottish stations. The maxima occurred irregularly, and, as a rule, they only slightly exceeded 50°. The range of temperature amounted to 40° at Thurso, but it was only in Scotland that it reached 30°, elsewhere it averaged about 25°.

Vapour Tension.—The tension of vapour was very uniformly distributed over England and Scotland, while in Ireland the differences between the means, although larger than elsewhere, were only moderate. *Relative Humidity* was still more evenly distributed over the entire kingdom.

Rainfall.—The fall of rain was rather above the average at most of the north-western stations, but below it elsewhere. The fall at Glenalmond on the 11th amounted to 1·36 inches, but it was only at two other stations that so much as an inch fell in 24 hours. The heaviest falls were most generally recorded on the 28th or 30th.

TABLE A., DECEMBER.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of DECEMBER 1877; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

NAMES OF OBSERVATORIES.	PRESSURE at 32° F. and the Mean Sea Level (In English Inches).						TEMPERATURE In the Shade (In Degrees Fahrenheit).						HYGRO-METRIC VALUES.		RAIN-FALL (In English Inches).
	Mean for the Month.	Extremes.				Range.	Mean for the Month.	Extremes.				Range.	Tension of Vapour (In English Inches).	Relative Humidity (Saturation = 100).	
		Minimum.		Maximum.				Minimum.		Maximum.					
		Reading.	Date.	Reading.	Date.			Reading.	Date.	Reading.	Date.				
Valencia - -	ins. 30·034	ins. 29·149	D. H. 6th, 5 a.m.	ins. 30·682	D. H. 19th, 5 p.m.	ins. 1·533	° 47·1	° 37·8	D. H. 27th, 9 a.m.	° 54·1	D. H. 11th, 7 p.m.	° 16·3	in. ·274	% 85	ins. 7·068
Armagh - -	29·947	29·048	1st, 1 a.m.	·679	19th, 9 p.m.	1·631	41·1	30·0	3rd, 1 a.m. 26th, 8 p.m.	50·8	11th, 8 p.m.	20·8	·236	92	3·378
Glasgow - -	·850	28·949	1st, 1 a.m.	·605	19th, 9 p.m.	1·656	40·7	26·6	28th, 9 a.m.	50·9	11th, 10 p.m.	24·3	·222	88	4·785
Aberdeen - -	29·799	28·953	1st, 1 a.m.	·568	19th, 9 p.m.	1·615	38·9	19·5	25th, 11 p.m.	52·6	22nd, 4 p.m.	33·1	·204	87	2·715
Falmouth - -	30·104*	29·087	1st, 1 a.m.	·683	19th, 10 p.m.	1·596	46·1	37·0	26th, 1 a.m.	53·6	6th, 3 a.m.	16·6	·266	86	4·043
Stonyhurst - -	29·961	28·957	1st, 1 a.m.	·672	19th, Midt. 20th, 1 a.m.	1·715	40·3	28·1	20th, 7 a.m.	49·6	6th, 1 p.m.	21·5	·223	90	6·233
Kew - -	30·044	29·138	1st, 2 a.m.	30·691	20th, 9 a.m.	1·553	41·0	7·9	28th, 7 a.m.	53·3	6th, 2 p.m.	25·4	·223	87	1·290

* Mean for one day is approximate.

TABLE B., DECEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not
(The Stations are grouped in Districts, and then arranged in order of

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m.	AIR TEMPERATURE.									
			At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Means of			Absolute Extremes.			
						Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
		ins.	°	°	°	°	°	°	°		°	
0. SCOTLAND, N.	Sandwick Manse (Orkneys)	29·701	39·7	40·5	40·1	36·9	44·5	40·7	25·6	28th	51·8	22nd
1. SCOTLAND, E.	Glenalmond	29·847	36·7	38·0	37·4	32·2	43·4	37·8	17·0	26th	52·5	16th
2. ENGLAND, N.E.	Seaham	29·897	40·2	40·5	40·4	35·1	45·0	40·1	24·8	25th	52·2	22nd
	Durham*	29·902	39·6	38·9	39·3	34·6	44·3	39·5	25·0	25th	51·9	12th
	Hull	29·968	38·8	39·4	39·1	34·7	44·5	39·6	26·5	27th	53·5	22nd
	Kelstern ℜ	29·987	36·6	37·4	37·0	33·3	42·3	37·8	23·9	27th	48·8	29th
3. ENGLAND, E.	Hillington ℜ	29·981	37·8	38·2	38·0	33·7	44·0	38·9	22·1	26th	51·7	29th
	Audley End ℜ	30·053	39·0	39·8	39·4	34·5	44·9	39·7	25·0	26th	53·0	29th
	Chigwell Row	30·072	39·2	40·0	39·6	35·3	45·1	40·2	27·0	19th, 26th	52·5	6th, 29th
4. MIDLAND COUNTIES.	Wakefield ℜ	29·972	40·7	40·6	40·7	36·1	46·1	41·1	26·4	26th	53·4	29th
	Buxton ℜ	30·008	38·4	37·8	38·1	34·0	—	—	23·2	26th	—	—
	Cheadle ℜ	30·015	37·8	38·1	37·9	34·4	42·9	38·7	24·8	26th	49·5	6th
	Leicester	30·015	39·4	40·0	39·7	35·7	45·1	40·4	26·9	27th	52·3	6th
	Uppingham	30·010	37·9	38·4	38·2	33·7	43·8	38·8	25·9	26th	51·3	29th
	Oscott	30·016	38·5	38·8	38·7	34·6	44·3	39·5	25·8	27th	51·1	6th
	Churchstoke ℜ	30·040	40·0	39·6	39·8	34·2	45·5	39·9	26·7	28th	51·9	6th, 29th
	Hereford ℜ	30·035	39·9	39·5	39·7	34·6	46·3	40·5	27·2	25th	54·7	29th
5. ENGLAND, S.	Marlborough ℜ	30·075	38·3	39·1	38·7	34·6	45·1	39·9	26·7	26th	51·9	6th
	Strathfield Turgiss ℜ	30·066	38·9	39·3	39·1	34·3	46·0	40·2	25·7	28th	55·1	6th
	Ramsgate ℜ	30·042	40·7	40·6	40·7	36·9	45·5	41·2	30·0	27th	52·5	29th
	Folkestone	30·054	41·0	40·6	40·8	36·5	46·0	41·3	28·6	25th	51·2	6th
	Hastings	30·071	40·7	40·9	40·8	36·9	46·0	41·5	28·0	28th	51·5	6th
6. SCOTLAND, W.	—	—	—	—	—	—	—	—	—	—	—	—
7. ENGLAND, N.W.	Hawes ℜ	29·957	38·1	38·6	38·4	34·4	42·5	38·5	25·0	25th	49·0	12th
	Prestwich	29·970	39·0	39·4	39·2	35·6	44·2	39·9	28·6	25th, 26th	50·5	6th
	Llandudno ℜ	29·985	43·5	43·7	43·6	39·7	48·1	43·9	33·6	28th	55·5	12th
8. ENGLAND, S.W.	Caermarthen ℜ	30·050	42·5	41·7	42·1	37·5	48·4	43·0	29·3	28th	53·2	29th
	Dartmoor ℜ	30·105	38·9	38·8	38·9	35·1	43·3	39·2	29·0	28th	49·6	6th
	Babbacombe ℜ	30·097	42·2	41·9	42·1	38·1	48·1	43·1	30·9	25th	53·9	29th
9. IRELAND, N.	Markree Castle	29·950	40·9	41·5	41·2	36·3	47·2	41·8	29·3	28th	52·7	11th
10. IRELAND, S.	Dublin	30·004	41·7	42·4	42·1	37·7	47·0	42·4	30·2	28th	53·7	12th
	Parsonstown	30·015	39·9	40·4	40·2	34·8	47·9	41·4	24·4	3rd	57·7	5th
CHANNEL	Jersey (St. Aubin's)	30·150	46·9	46·0	46·5	42·5	50·2	46·4	36·0	10th	54·9	6th

NOTE.—The stations marked thus ℜ are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of DECEMBER 1877.
corrected for Diurnal Range.
Latitude, beginning in each case with the Station lying furthest North.)

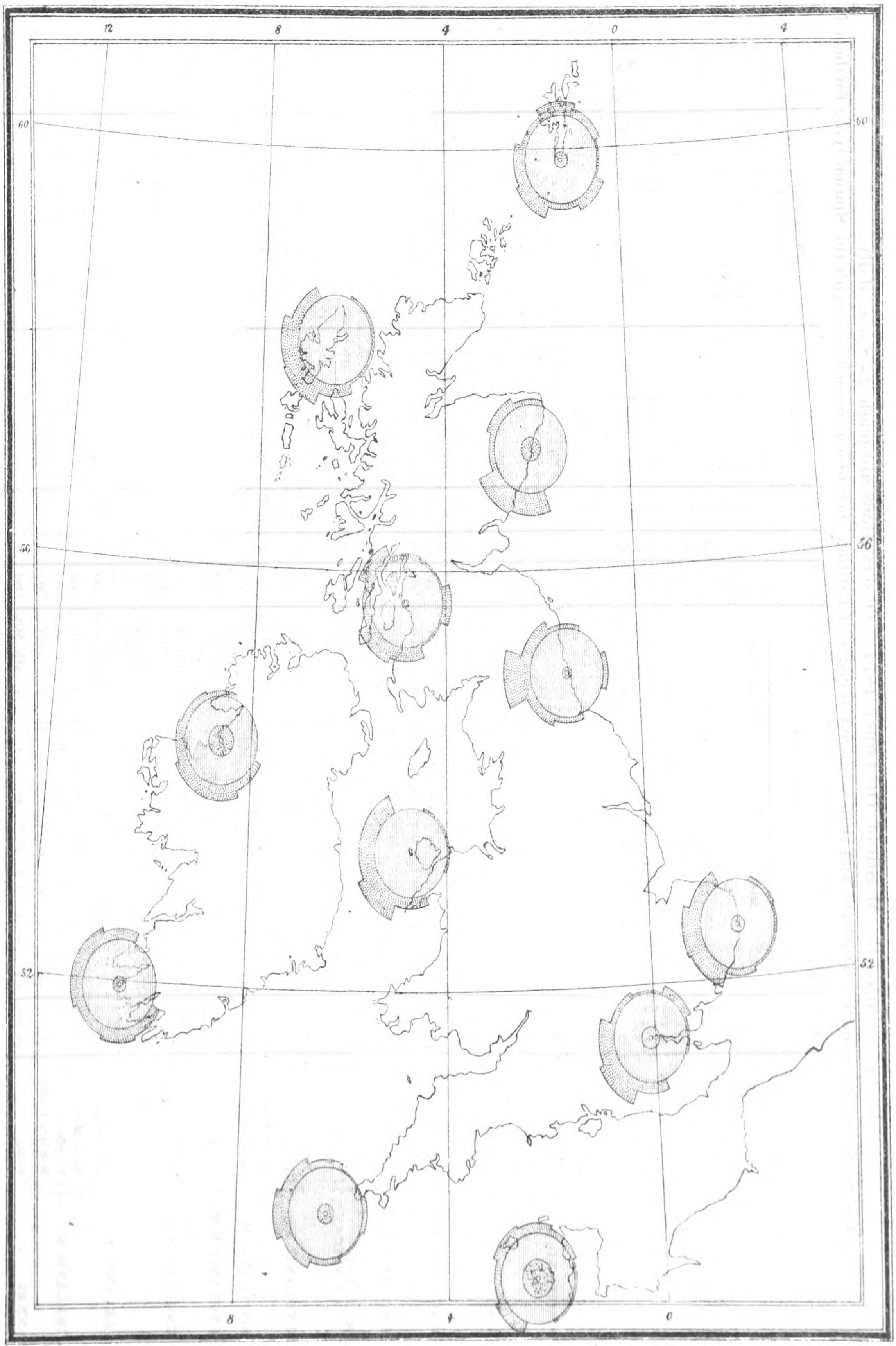
TENSION OF VAPOUR.			RELATIVE HUMIDITY.			AMOUNT OF CLOUD (0 to 10).			RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	At 9 a.m.	At 9 p.m.	Mean of 9 a.m. and 9 p.m.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
in.	in.	in.	%	%	%				ins.	ins.																	
·220	·226	·223	90	90	90	7·1	7·3	7·2	4·100	·540	10th	23	3	1	0	3	17	3	3	0	1	3	16	15	11	6	7
·201	·212	·207	90	91	91	6·4	6·2	6·3	4·691	1·360	11th	17	6	0	0	3	10	3	2	0	5	1	7	12	20	10	5
·222	·231	·227	90	92	91	6·1	5·2	5·7	1·669	·700	30th	17	3	0	0	5	10	0	2	2	2	1	7	18	21	6	3
·214	·211	·213	87	87	87	5·4	6·0	5·7	2·237	·742	30th	14	3	0	0	6	10	0	1	3	3	2	12	17	11	10	3
·217	·226	·222	92	94	93	6·1	4·4	5·3	1·850	·270	5th	18	2	0	0	5	8	1	0	1	0	2	4	19	9	5	22
·208	·216	·212	95	95	95	6·1	5·3	5·7	2·270	·337	30th	16	4	0	0	9	11	1	2	4	2	3	8	20	15	7	1
·221	·223	·222	96	95	95	6·6	6·6	6·6	1·902	·530	28th	19	5	0	0	5	15	0	3	5	0	5	6	22	5	15	1
·224	·229	·227	93	92	92	6·7	5·4	6·1	2·000	·620	28th	21	4	0	0	3	11	0	1	3	0	2	1	16	7	12	20
·224	·229	·227	93	93	93	7·9	6·6	7·3	1·880	·560	28th	17	3	0	0	1	15	0	6	3	2	3	1	13	15	12	7
·228	·222	·225	89	87	88	6·7	6·1	6·4	2·370	·810	30th	17	2	0	0	2	10	0	3	0	0	0	3	11	20	6	19
·210	·205	·208	89	89	89	8·0	7·5	7·8	5·060	·900	30th	24	9	0	0	0	13	1	1	2	4	1	1	5	20	26	2
·213	·212	·213	94	92	93	8·2	7·2	7·7	2·860	·590	5th	23	5	0	0	2	17	1	3	5	0	4	7	14	16	8	5
·218	·217	·218	91	88	90	7·8	6·2	7·0	1·690	·570	28th	17	4	0	0	4	16	1	2	3	0	3	6	18	21	8	1
·217	·222	·220	94	94	94	7·3	6·3	6·8	1·868	·572	28th	16	5	0	0	5	16	1	1	4	0	1	5	16	16	14	5
·223	·223	·223	94	93	93	8·2	6·3	7·3	1·630	·490	28th	16	5	0	0	3	18	2	4	3	0	3	8	20	14	7	3
·227	·221	·224	90	90	90	6·0	5·8	5·9	2·103	·467	28th	22	5	1	0	3	6	0	1	2	3	4	5	11	17	9	10
·222	·217	·220	89	89	89	6·6	4·8	5·7	1·743	·560	28th	21	4	0	0	6	10	0	0	2	0	2	1	3	13	6	35
·221	·226	·224	94	94	94	7·0	6·0	6·5	2·391	·530	28th	19	3	0	0	5	14	0	4	0	0	0	4	9	23	4	18
·222	·223	·223	90	91	91	6·7	6·7	6·7	1·677	·477	28th	17	4	0	0	3	14	0	2	3	0	4	3	12	13	11	14
·232	·233	·233	90	91	90	7·2	5·6	6·4	2·721	·659	28th	16	3	0	0	5	12	1	0	6	0	4	5	15	16	7	9
·235	·231	·233	91	91	91	7·2	5·3	6·3	2·440	·670	1st	20	2	0	0	6	13	2	5	6	3	2	11	4	25	4	2
·235	·235	·235	90	90	90	6·6	4·9	5·8	2·700	·815	28th	19	1	2	0	7	12	2	7	9	3	1	6	12	14	10	0
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
·207	·211	·209	88	89	88	8·5	7·6	8·1	5·730	1·000	30th	23	5	4	1	0	18	0	1	1	3	1	1	10	27	3	15
·226	·226	·226	95	94	95	7·8	7·0	7·4	3·745	·690	30th	23	4	4	0	0	16	0	2	7	0	5	10	11	11	7	9
·243	·238	·240	86	84	85	7·8	6·0	6·9	3·875	1·030	30th	23	1	8	0	2	15	0	2	1	5	2	5	12	24	11	0
·254	·253	·254	92	94	93	6·5	6·5	6·5	4·130	1·020	28th	22	1	0	0	3	12	0	6	0	4	2	0	12	12	6	20
·224	·226	·225	93	95	94	7·5	5·9	6·7	6·000	·960	28th	25	2	2	0	4	13	1	6	4	1	2	3	8	4	17	17
·244	·244	·244	89	91	90	6·4	5·8	6·1	1·800	·460	5th	19	1	1	0	4	10	1	5	4	1	1	3	12	20	7	9
·238	·240	·239	91	90	91	7·6	6·7	7·2	3·982	·395	11th	28	3	5	1	1	12	0	4	0	0	4	15	11	7	7	14
·235	·245	·240	88	89	88	6·5	6·1	6·3	2·330	·570	28th	17	6	4	0	1	9	1	0	0	0	3	6	11	20	8	5
·235	·244	·240	93	95	94	7·4	6·0	6·7	3·353	·510	28th	28	1	0	0	2	13	0	0	0	1	6	6	15	20	4	10
·269	·256	·263	83	82	83	7·9	6·5	7·2	3·020	·605	25th	25	0	5	0	2	16	0	8	5	1	3	0	10	8	11	16

TABLE C., DECEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of DECEMBER 1877. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.								TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER. No. of Days of							WIND. No. of Observations of								
				Means of			Absolute Extremes.																									
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
		ins.	°	°	°	°	°		°		in.	%		ins.	ins.																	
0. SCOTLAND, N.	Sumburgh Head	29·678	40·7	35·6	44·2	39·9	19	26th	50	21st, 22nd	0·213	84	6·9	5·13	0·98	23rd	25	2	0	0	6	13	5	6	3	1	4	2	6	5	2	2
	Thurso	29·687	38·5	33·1	44·0	38·6	15	28th	55	22nd	·215	93	7·1	3·87	0·70	23rd	26	5	0	0	4	14	2	2	0	1	2	10	8	2	3	3
	Wick	29·709	39·1	33·3	43·5	38·4	20	28th	53	22nd	·209	88	6·8	3·02	0·59	23rd	22	1	0	0	5	13	2	2	1	0	2	5	9	7	4	1
	Stornoway	29·681	40·0	34·5	44·0	39·3	28	27th	51	22nd	·230	94	8·0	6·79	0·59	11th	30	5	3	0	5	21	6	0	1	1	1	4	10	9	5	0
1. SCOTLAND, E.	Nairn	29·740	38·9	34·2	43·7	39·0	22	26th	51	9th, 22nd	·202	86	5·6	1·96	0·37	11th	16	0	0	0	6	8	3	0	1	0	1	0	8	7	2	12
	Aberdeen	29·751	38·4	34·4	43·8	39·1	19	26th	54	22nd	·201	87	5·5	2·66	0·55	6th	15	3	0	0	8	8	4	2	0	0	0	9	10	2	4	4
	Leith	29·819	40·1	36·3	46·0	41·2	24	26th	53	11th, 16th	·236	95	6·0	1·66	0·73	10th	13	3	1	0	6	11	1	0	1	1	0	2	9	13	2	3
2. ENGLAND, N.E.	Shields	29·882	39·9	35·8	45·0	40·4	25	25th	52	22nd	·210	86	6·5	1·72	0·56	30th	15	5	0	0	11	18	5	2	0	2	0	2	4	15	5	1
	Scarborough	29·910	39·5	36·6	44·0	40·3	26	26th	51	16th	·218	90	6·7	2·27	0·87	30th	15	2	1	0	6	12	2	1	2	1	1	1	11	8	6	0
	York	29·943	38·5	33·7	44·6	39·2	26	27th	52	22nd	·213	92	5·5	2·11	0·96	30th	20	2	0	0	11	11	1	4	2	0	0	8	6	8	3	0
3. ENGLAND, E.	Yarmouth	29·981	38·9	35·2	43·1	39·2	27	26th	49	6th, 12th, 29th.	·223	95	5·6	2·34	0·44	1st	19	2	1	0	13	12	3	0	2	1	1	2	8	9	6	2
	Cambridge	30·009	37·8	33·9	46·3	40·1	27	26th	54	29th	·214	95	6·8	1·75	0·60	28th	18	3	0	0	8	18	0	3	1	0	1	5	16	2	3	0
4. MIDLAND COUNTIES.	Nottingham	29·997	38·1	33·9	45·3	39·6	24	26th	52	6th, 11th, 29th.	·215	94	6·2	1·90	0·44	5th	21	4	1	2	9	13	2	2	2	0	2	6	10	1	3	5
	Oxford	30·030	38·9	35·4	45·9	40·7	27	26th	54	6th	·219	93	6·6	1·61	0·47	5th	16	3	0	0	8	16	0	2	0	0	0	5	5	8	2	9
5. ENGLAND, S.	London	30·033	39·3	35·5	46·6	41·1	27	28th	55	6th	·220	92	6·8	1·51	0·52	28th	16	2	0	0	6	16	3	1	3	1	0	4	10	7	2	3
	Dover	30·039	41·7	38·2	46·1	42·2	31	25th, 27th 28th.	51	6th	·230	88	5·7	2·77	0·98	1st	16	0	0	0	7	10	1	1	4	1	1	2	7	10	5	0
	Hurst Castle	30·034	43·4	38·7	48·0	43·4	29	20th	54	6th	·253	90	5·8	1·85	0·59	5th	13	0	0	0	10	13	0	4	4	1	1	0	6	7	6	2
6. SCOTLAND, W.	Ardrossan	29·838	42·7	36·6	46·1	41·4	28	26th	52	17th, 21st. 22nd.	·235	85	7·3	6·64	0·97	9th	25	2	0	0	4	18	8	2	1	4	1	5	7	3	7	1
7. ENGLAND, N.W.	Liverpool	29·954	41·9	38·5	46·2	42·4	30	26th	53	11th	·244	93	8·3	2·88	0·49	30th	22	0	0	0	3	22	5	1	2	0	6	2	8	8	4	0
	Holyhead	29·964	44·3	41·1	48·2	44·7	35	29th	54	29th	·251	86	7·0	4·17	0·92	30th	21	0	1	1	4	11	5	0	1	1	0	4	11	7	7	0
8. ENGLAND, S.W.	Pembroke	30·026	46·0	43·5	49·0	46·3	38	28th	53	5th, 6th	·267	87	6·1	3·08	0·84	28th	21	0	0	0	8	13	6	1	3	1	2	3	4	10	6	1
	Portishead	30·023	42·3	36·9	47·8	42·4	29	26th	54	6th	·244	91	6·6	2·24	0·56	28th	18	1	1	0	3	11	5	3	1	0	1	2	8	11	2	3
	Plymouth	30·078	41·4	37·5	49·0	43·3	31	15th, 28th	54	5th, 6th, 11th, 28th, 30th.	·244	94	5·8	2·66	0·65	5th	20	0	0	0	11	16	0	1	2	0	2	1	5	2	9	9
9. IRELAND, N.	Greencastle	29·873	41·3	37·0	46·0	41·5	28	25th	53	22nd	·230	89	8·6	5·80	0·65	25th	27	3	0	0	4	25	0	3	0	1	2	6	8	5	5	1
	Donaghadee	29·897	40·5	36·5	44·8	40·7	29	27th	50	6th, 22nd	·241	96	5·3	3·00	0·54	28th	21	0	0	0	9	7	2	0	1	1	0	4	8	14	3	0
10. IRELAND, S.	Kingstown	29·969	43·5	39·9	47·3	43·6	33	27th, 28th	54	11th	·237	84	5·7	2·08	0·48	30th	18	0	0	0	5	4	5	0	0	0	5	6	2	13	4	1
	Valencia	30·025	46·4	41·6	51·3	46·5	36	28th	55	8th, 11th	·276	88	8·1	6·84	0·91	9th	28	0	3	0	1	16	5	4	0	0	4	5	4	6	6	2
	Roche's Point	30·033	44·5	40·5	49·5	45·0	35	15th, 18th, 28th.	55	29th	·257	88	6·5	5·34	0·94	5th	21	0	0	0	6	14	3	5	2	0	0	3	5	9	7	0
CHANNEL	Scilly	30·099	49·1	46·3	51·3	48·8	42	25th	54	5th, 6th, 29th.	·297	85	8·5	3·34	0·58	5th	27	0	0	0	1	18	9	3	1	2	1	2	5	8	6	3

MONTHLY WIND CHART FOR DECEMBER 1877.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Dangerfield Lith 22 Bedford St. Covent Garden

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MONTHLY WEATHER CHART, DECEMBER, 1877.

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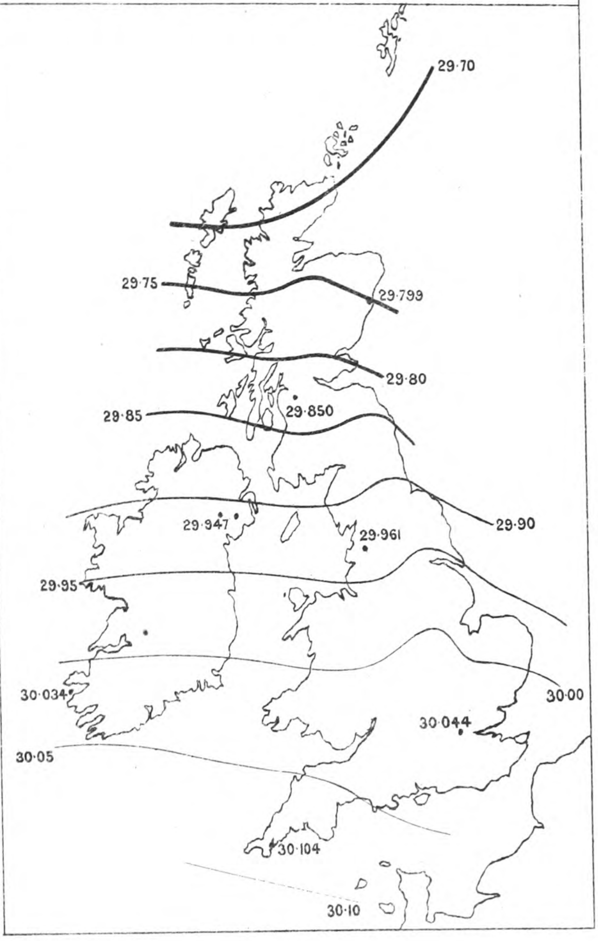
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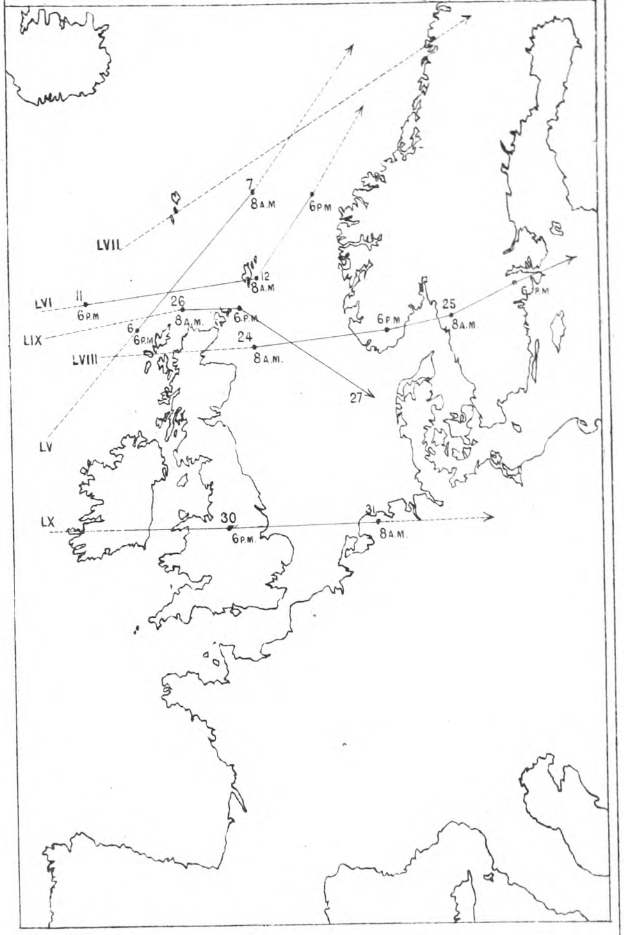
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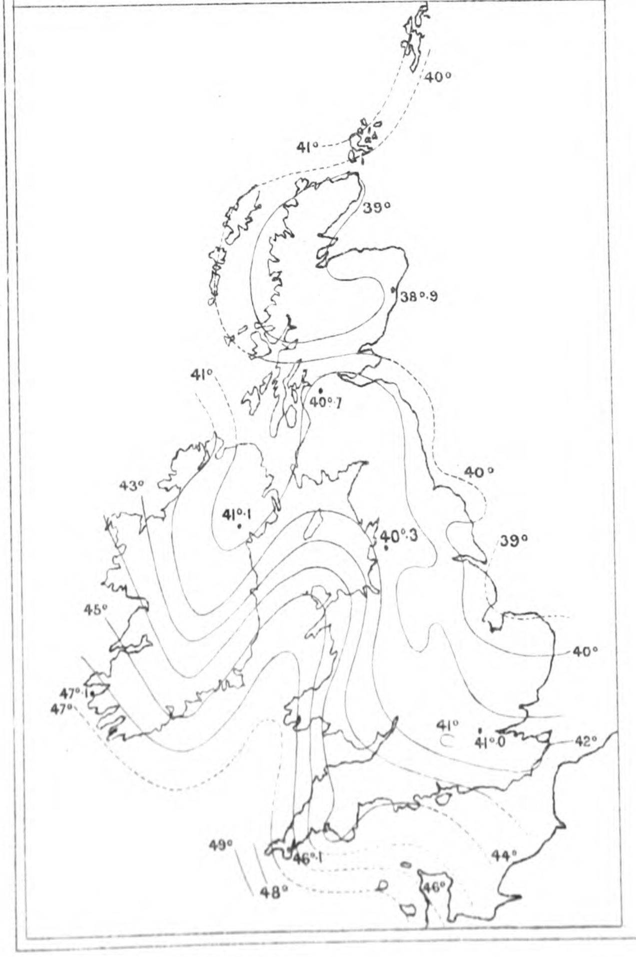
3. DISTRIBUTION OF MEAN TEMPERATURE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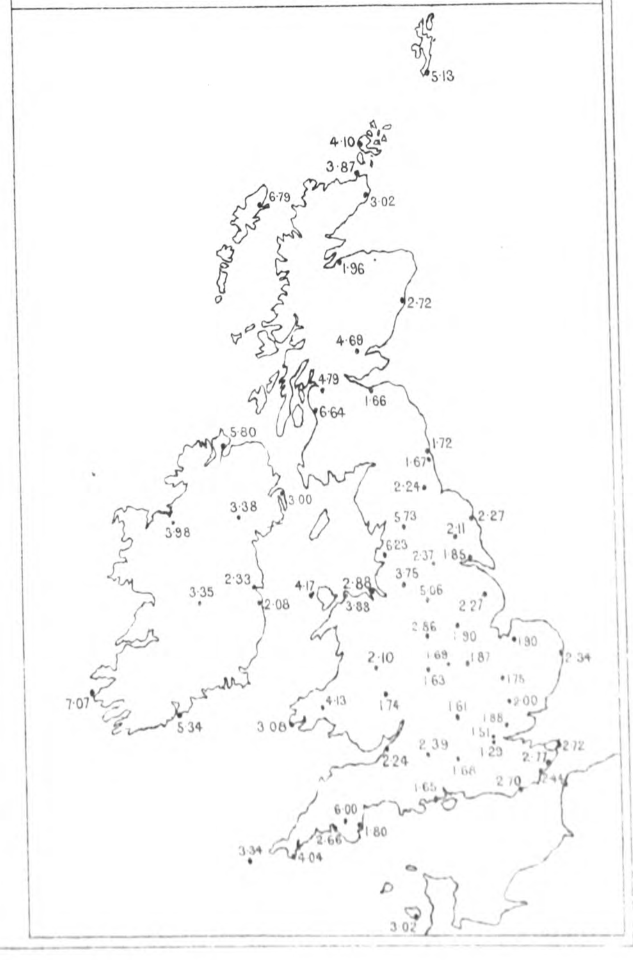
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2·44
1·65
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2·66
4·04
3·02

To follow Wind Chart for December.

DANGERFIELD, LITH 22, BEDFORD ST COVENT GARDEN.

APPENDIX.

APPENDIX I.

TABLE I.—MEAN MONTHLY RESULTS from the continuous RECORDS at the SEVEN BRITISH OBSERVATORIES for the Year 1877.

VALENCIA.

1877. MONTHS.	THERMOMETER.					BAROMETER.					VAPOUR TENSION.
	Means.	Extremes.				Means.	Extremes.				
		Maximum.		Minimum.			Maximum.		Minimum.		
		Day.	Ther.	Day.	Ther.		Day.	Bar.	Day.	Bar.	
	°	D. H.	°	D. H.	°	ins.	D. H.	ins.	D. H.	ins.	in.
January - -	46·6	16th, 1 p.m.	53·4	**2nd, 3 a.m.**	**33·4**	29·633	21st, 8 p.m. 9 p.m.	30·415	**6th, 8 p.m.**	**28·324**	·260
February - -	47·5	6th, 9 p.m.	54·1	**28th, 7 a.m.**	**33·4**	·990	28th, 11 a.m.	·279	26th, 1 a.m.	29·467	·278
March - -	45·4	29th, Noon	55·7	20th, 1 a.m.	34·0	·792	8th, 11 p.m.	·280	24th, 7 p.m.	28·707*	·249
April - -	48·5	15th, 2 p.m.	59·7	19th, 4 a.m.	37·6	·609	30th, Midt.	·282	5th, 4 a.m.	·845	·285
May - - -	51·1	20th, 6 p.m.	62·0	7th, 5 a.m.	37·0	·810	21st, 11 p.m.	·327	28th, 2 a.m.	28·925	·296
June - - -	57·3	**17th, Noon**	**74·4**	24th, 4 a.m.	47·3	·911	30th, 9 a.m.	·253	1st, 1 a.m.	29·053	·388
July - - -	57·6	30th, 2 p.m.	67·3	5th, 8 a.m.	48·4	·911	7th, 10 p.m.	·350	23rd, 1 p.m. 2 p.m. 3 p.m.	29·202	·395
August - -	58·5	15th, 5 p.m. 6 p.m.	71·5	23rd, 4 a.m.	45·5	29·786	2nd, 1 p.m.	·189	8th, 2 a.m.	28·863	·409
September - -	55·0	10th, 4 p.m.	67·0	22nd, 6 a.m.	42·5	30·050†	18th, 1 a.m.	·449	11th, 1 p.m.	29·366	·349
October - -	53·8	6th, 3 p.m. 4 p.m.	64·4	17th, 1 a.m.	39·3	29·895‡	**6th, 10 p.m.**	**·660**	14th, 6 p.m.	28·949	·342
November - -	48·5	15th, 8 p.m.	56·1	27th, Midnt.	38·7	29·540	1st, 1 a.m.	·413	11th, Noon	28·325	·279
December - -	47·1	11th, 7 p.m.	54·1	27th, 9 a.m.	37·8	30·009	19th, 5 p.m.	30·656	6th, 5 a.m.	29·125	·274
Annual - -	51·4	—	—	—	—	29·828	—	—	—	—	·317

* Approximate reading, trace faint. † Means for five days are approximate. ‡ Mean for one day is approximate.

R 6412. 300.—5/83. Wt. 24683.

Table I.—Mean Monthly Results, &c.—*continued.*

ARMAGH.

1877 Months.	Thermometer.					Barometer.					Vapour Tension.
	Means.	Extremes.				Means.	Extremes.				
		Maximum.		Minimum.			Maximum.		Minimum.		
		Day.	Ther.	Day.	Ther.		Day.	Bar.	Day.	Bar.	
	°	D. H.	°	D. H.	°	ins.	D. H.	ins.	D. H.	ins.	in.
January - -	41·2	16th, 3 p.m.	51·3	13th, 3 a.m.	31·2	29·415	21st, Midnt.	30·241	6th, Midnt.	28·285	·229
February - -	42·7	14th, 4 p.m. 15th, Noon	51·9	**28th, 1 a.m.**	**27·7**	·639	28th, 8 p.m.	·139	26th, 1 a.m.	·892	·237
March - -	41·0	2nd, 1 p.m.	55·5	19th, 6 a.m.	29·2	~~·555~~ 23	1st, 1 a.m.	·089	24th, 8 p.m.	·698	·219
April - -	43·8	14th, 4 p.m.	52·9	19th, 5 a.m.	33·3	·516	30th, Midnt.	·146	4th, 9 p.m.	·727	·236
May - - -	47·8	16th, 2 p.m.	62·3	4th, 5 a.m.	31·1	·637	1st, 8 a.m.	30·208	28th, 8 a.m.	·499	·257
June - - -	56·7	**20th, 3 p.m.**	**74·0**	24th, 4 a.m.	42·1	·701	28th, 5 a.m.	29·991	1st, 5 a.m.	·957	·363
July - - -	56·4	30th, 3 p.m.	69·7	6th, 4 a.m.	42·0	·614	7th, 9 p.m.	30·047	15th, 6 p.m.	28·878	·382
August - -	56·6	19th, 2 p.m.	69·0	23rd, 6 a.m.	41·2	·589	12th, 11 a.m.	29·920	8th, 5 a.m. 7 a.m.	29·004	·397
September - -	51·4*	13th, 2 p.m.	61·6	22nd, 3 a.m.	38·0	·854	17th, 9 p.m.	30·302	13th, 9 p.m.	29·167	·328
October - -	49·7	13th, 1 p.m.	60·7	18th, 7 a.m.	34·0	·644	**6th, 10 a.m.**	**·454**	15th, 2 a.m.	28·576	·316
November - -	43·3	15th, 9 p.m.	55·9	24th, 6 a.m.	31·4	·239	1st, 10 a.m.	·166	**11th, 4 p.m.**	**27·991**	·248
December - -	41·1	11th, 8 p.m.	50·8	3rd, 1 a.m. 26th, 8 p.m.	30·0	29·713	19th, 9 p.m.	30·442	1st, 1 a.m.	28·821	·236
Annual - -	47·6	—	—	—	—	29·593	—	—	—	—	·287

* Mean for one day is approximate.

GLASGOW.

1877 Months.	Thermometer Means.	Maximum Day.	Maximum Ther.	Minimum Day.	Minimum Ther.	Barometer Means.	Maximum Day.	Maximum Bar.	Minimum Day.	Minimum Bar.	Vapour Tension.
	°	D. H.	°	D. H.	°	ins.	D. H.	ins.	D. H.	ins.	in.
January - -	38·2	19th, 1 p.m. 2 p.m.	50·4	3rd, 1 a.m.	24·9	29·428	22nd, 10 a.m.	30·271	7th, 2 a.m.	28·440	·201
February - -	40·6	15th, Noon	51·2	**27th, 6 a.m.**	**22·0**	·530	28th, 10 p.m.	·112	19th, 11 p.m.	·837	·208
March - -	38·6	2nd, 2 p.m. 3 p.m. 31st, Noon	51·8	1st, 6 a.m.	24·7	·479	1st, 1 a.m.	·099	24th, 3 p.m.	·888	·196
April - -	41·5	20th, 2 p.m.	54·4	12th, 6 a.m.	29·9	·590	30th, Midnt.	·186	4th, 10 p.m.	·609	·199
May - - -	46·4	25th, 3 p.m. 31st, 5 p.m.	59·0	8th, 5 a.m.	30·4	·643	21st, 10 p.m.	·236	28th, 1 p.m.	·492	·225
June - - -	55·2	**17th, 5 p.m.**	**72·7**	12th, 4 a.m.	43·2	·687	16th, 8 a.m.	30·042	1st, 2 p.m.	·961	·325
July - - -	55·6	30th, 9 a.m.	65·7	6th, 1 a.m. 8th, 1 a.m.	45·9	·560	8th, 10 a.m.	29·940	15th, 6 p.m.	28·892	·364
3 p.m. August - -	54·8	6th, ?	69·3*	23rd, 6 a.m.	42·8	·596†	12th, 9 p.m. 10 p.m.	29·989	28th, 7 a.m. 9 a.m.	29·103	·356
September - -	51·0	11th, Noon	63·2	8th, 6 a.m.	37·4	·833	17th, 8 p.m.	30·277	14th, 1 a.m.	29·115	·297
October - -	47·6	14th, 8 p.m.	60·3	17th, 11 p.m.	32·4	·608	**6th, 9 a.m.**	**·425**	15th, 5 a.m.	28·542	·277
November - -	43·3	15th, 11 p.m.	56·3	25th, 0·3 a.m.	30·9	·189	1st, 11 a.m.	·075	**11th, 5 p.m.**	**27·978**	·239
December - -	40·7	11th, 10 p.m.	50·9	28th, 9 a.m.	26·6	29·643	19th, 9 p.m.	30·393	1st, 1 a.m.	28·748	·222
Annual - -	46·1	—	—	—	—	29·566	—	—	—	—	·259

* Corrected reading of Phillips' maximum thermometer. † Means for three days are approximate.

Table I.—Mean Monthly Results, &c.—*continued.*

ABERDEEN.

1877. Months.	Thermometer.					Barometer.					Vapour Tension.
	Means.	Extremes.				Means.	Extremes.				
		Maximum.		Minimum.			Maximum.		Minimum.		
		Day.	Ther.	Day.	Ther.		Day.	Bar.	Day.	Bar.	
	°	D. H.	°	D. H.	°	ins.	D. H.	ins.	D. H.	ins.	in.
January - -	37·8	19th, 4 p.m.	47·4	3rd, 8 a.m.	21·9	29·540	22nd, 10 a.m.	30·365	7th, 5 a.m.	28·646	·190
February - -	38·3	15th, 2 p.m.	50·7	27th, 8 a.m.	21·0	·569	28th, 8 p.m.	·209	25th, 8 a.m.	28·857	·187
March - -	37·8	2nd, 1 p.m.	52·4	1st, 6 a.m.	23·8	·566	1st, 1 a.m.	·185	16th, 5 a.m.	29·117	·185
April - -	40·2	4th, 3 p.m.	50·3	12th, 5 a.m.	30·1	·774	30th, Midnt.	·283	4th, 5 a.m.	28·857	·198
May - - -	44·5	30th, Noon	58·6	3rd, 2 a.m.	29·5	·777	21st, 11 p.m.	·380	28th, 4 p.m.	28·607	·233
June - - -	52·9	29th, 3 p.m.	65·9	13th, 3 a.m.	39·8	·804	16th, 10 a.m.	·203	1st, 8 p.m.	29·087	·312
July - - -	56·0*	**30th, 3 p.m.**	**71·0**	8th, 3 a.m.	41·8	·645*	7th, Midnt.	·026	15th, 5 p.m.	·158	·355
August - -	53·2	16th, 3 p.m.	64·1	25th, 5 a.m.	36·6	·722	12th, 11 p.m.	·146	8th, 7 a.m.	·202	·347
September - -	49·9	14th, Noon	63·8	9th, 5 a.m.	35·3	·928	17th, 6 p.m.	·394	14th, 4 a.m.	29·171	·289
October - -	46·2	6th, 3 p.m.	62·5	19th, 5 a.m.	29·6	·687	**6th, 9 a.m.** **10 a.m.**	**·467**	15th, 7 a.m.	28·653	·259
November - -	42·8	16th, 1 a.m.	56·5	24th, 8 a.m.	28·0	·268	1st, Noon	·097	**11th, 8 p. m**	**·194**	·225
December - -	38·9	22nd, 4 p.m.	52·6	**25th, 11 p.m.**	**19·5**	29·700	19th, 9 p.m.	30·465	1st, 1 a.m.	28·857	·204
Annual - -	44·9	—	—	—	—	29·665	—	—	—	—	·249

* Mean for one day is approximate.

FALMOUTH.

	°	D. H.	°	D. H.	°	ins.	D. H.	ins.	D. H.	ins.	in.
January - -	47·5	3rd, 10 a.m.	54·4	13th, 4 a.m.	37·7	29·599	21st, 11 a.m. Noon	30·375	1st, 6 a.m.	28·472	·281
February - -	47·2	14th, 1 p.m.	55·2	28th, 8 a.m.	34·9	·833	4th, 10 p.m. 11 p.m.	·190	26th, 5 a.m.	29·210	·277
March - -	44·5	29th, 1 p.m.	55·7	**1st, 5 a.m.**	**33·6**	·590	1st, 1 a.m.	·173	25th, 5 a.m.	28·482	·243
April - -	48·2	21st, 1 p.m.	57·7	17th, Midnt.	36·9	·483	30th, Midnt.	·040	4th, 11 a.m.	28·793	·283
May - - -	50·2	14th, 4 p.m. 26th, 1 p.m.	60·3	5th, 5 a.m.	37·2	·653	1st, 5 p.m. 9 p.m.	·153	28th, 2 a.m. 9 a.m.	29·053	·284
June - - -	58·4	**29th, 2 p.m.**	**70·9**	7th, 5 a.m.	47·6	·785	28th, 7 a.m.	·070	1st, 6 a.m.	28·895	·399
July - - -	59·3	29th, 1 p.m.	69·2	6th, 4 a.m.	49·9	·760	9th, 10 a.m.	30·185	14th, 5 p.m.	29·086	·415
August - -	60·1	19th, 1 p.m. 3 p.m.	69·4	24th, 6 a.m.	48·0	·667	23rd, 10 p.m.	29·984	8th, 10 a.m.	·032	·443
September - -	55·4	14th, 3 p.m.	63·3	22nd, 5 a.m.	43·3	·851	4th, 9 p.m. 10 p.m. 11 p.m.	30·188	11th, 10 a.m.	29·412	·355
October - -	53·4	14th, Noon	62·6	17th, 2 a.m.	41·0	·815	6th, 8 p.m.	·412	14th, 11 p.m.	28·871†	·330
November - -	49·3	9th, 1 p.m.	56·9	24th, 8 p.m.	39·6	·477	1st, 11 a.m.	·280	**11th, 6 p.m.**	**·379**	·292
December - -	46·1	6th, 3 a.m.	53·6	26th, 1 a.m.	37·0	29·868*	**19th, 10 p.m.**	**30·444**	1st, 1 a.m.	28·858	·266
Annual - -	51·6	—	—	—	—	29·698	—	—	—	—	·322

* Mean for one day is approximate. † Probable minimum.

Table I.—Mean Monthly Results, &c.—*continued.*

STONYHURST.

1877. MONTHS.	THERMOMETER.					BAROMETER.					VAPOUR TENSION.
	Means.	Extremes.				Means.	Extremes.				
		Maximum.		Minimum.			Maximum.		Minimum.		
		Day.	Ther.	Day.	Ther.		Day.	Bar.	Day.	Bar.	
	°	D. H.	°	D. H.	°	ins.	D. H.	ins.	D. H.	ins.	in.
January - -	40·5	19th, Noon	53·9	2nd, 9 a.m.	28·9	29·331	22nd, 10 a.m.	30·153	1st, 10 a.m.	28·339	·217
February - -	41·6	2nd, 4 p.m. 15th, 3 p.m.	51·2	28th, Midt.	21·0	·443	28th, 9 p.m.	29·970	20th, 3 a.m.	·584	·227
March - -	38·9	30th, 1 p.m.	51·7	**1st, 7 a.m.**	**16·0***	·324	1st, 1 a.m.	·958	25th, 4 a.m. 5 a.m.	·526	·198
April - -	43·1	22nd, 2 p.m. 3 p.m.	54·0	12th, 6 a.m.	32·8	·377	30th, Midnt.	29·961	4th, 5 p.m.	·497	·220
May - - -	46·7	31st, 1 p.m.	63·1	4th, 5 a.m.	27·2	·472	1st, 8 a.m.	30·024	28th, 11 a.m.	·561	·240
June - - -	57·3	**18th, 3 p.m.**	**76·3**	24th, 4 a.m.	40·9	·576	16th, 8 a.m.	29·858	1st, Noon	·805	·346
July - - -	56·8	30th, 3 p.m. 5 p.m.	68·5	19th, 3 a.m.	43·4	·451	30th, Noon	·858	15th, 11 a.m. Noon	·599	·377
August - -	57·7	6th, 2 p.m.	71·4	24th, 2 a.m.	43·9	·427	12th, 9 p.m.	29·735	8th, 6 p.m.	28·926	·394
September - -	51·2	11th, 11 a.m.	63·9	22nd, 6 a.m.	37·2	·664	17th, 10 p.m.	30·075	12th, 5 a.m.	29·182	·306
October - -	47·8†	14th, 2 p.m.	62·9	18th, ?	29·0	·525	**6th, 9 a.m.**	**30·303**	15th, 3 a.m.	28·587	·277
November - -	44·0	16th, 0·15 a.m.	57·0	25th, 7 a.m.	31·2	·142	1st, Noon	29·984	**11th, 7 p.m.**	**·097**	·246
December - -	40·3	6th, 1 p.m.	49·6	20th, 7 a.m.	28·1	29·556	19th, Midnt. 20th, 1 a.m.	30·254	1st, 1 a.m.	28·566	·223
Annual - -	47·2	—	—	—	—	29·441	—	—	—	—	·273

* Approximate reading, trace faint.

† Means for two days are approximate.

KEW.

	°	D. H.	°	D. H.	°	ins.	D. H.	ins.	D. H.	ins.	in.
January - -	43·3	19th, 2 p.m.	55·5	21st, 8 a.m.	27·1	29·811	21st, 10 a.m.	30·640	1st, 9 a.m.	28·699	·242
February - -	44·5	7th, 1 p.m.	57·6	28th, 6 a.m.	27·0	·904	28th, Midnt.	·354	20th, 7 a.m.	29·037	·235
March - -	41·1	29th, 2 p.m.	56·7	**23rd, 7 a.m.**	**23·0**	·727	1st, 10 a.m.	·381	25th, 4 a.m.	28·807	·207
April - -	46·4	4th, 2 p.m.	63·3	20th, 5 a.m.	33·2	·729	30th, Midnt.	·255	4th, 4 p.m.	28·945	·246
May - - -	49·4	8th, 3 p.m.	64·4	5th, 4 a.m.	30·0	·844	1st, 10 p.m.	·383	28th, 6 a.m.	29·219	·257
June - - -	61·6	11th, 5 p.m.	81·2	7th, 4 a.m.	45·0	·978	28th, 8 a.m.	·245	1st, 11 a.m.	·375	·376
July - - -	60·9	**31st, 4 p.m.**	**82·8**	8th, 4 a.m.	44·7	·883	9th, 10 a.m.	·281	15th, 2 a.m.	·080	·406
August - -	61·6	20th, 1 p.m.	79·0	24th, 6 a.m.	42·0	29·838	24th, 9 a.m.	·168	26th, 2 a.m.	·339	·420
September - -	52·6	11th, 2 p.m.	69·7	25th, 6 a.m.	34·5	30·028	27th, 10 a.m.	·371	3rd, 5 a.m.	·628	·325
October - -	48·5	14th, 1 p.m.	65·0	18th, 8 a.m.	29·0	29·989	6th, 8 a.m.	·640	25th, 2 p.m.	29·175	·279
November -	45·5	16th, 11 a.m.	58·0	4th, 4 a.m.	29·0	29·651	17th, 1 a.m.	·434	**11th, 11 p.m.**	**28·681**	·262
December - -	41·0	6th, 2 p.m.	53·3	28th, 7 a.m.	27·9	30·005	**20th, 9 a.m.**	**30·651**	1st, 2 a.m.	29·100	·223
Annual - -	49·7	—	—	—	—	29·866	—	—	—	—	·290

TABLE II.—PART 1.

FIVE-DAY MEANS of the DRY-BULB and WET-BULB THERMOMETERS, and BAROMETER, from the continuous RECORDS at the SEVEN BRITISH OBSERVATORIES, January to June 1877.

Five-Day Periods.	THERMOMETERS.														BAROMETER.							Five-Day Periods.
	Valencia. 12 ft.		Armagh. 4 ft.		Glasgow. 7 ft.		Aberdeen. 41 ft.		Falmouth. 11 ft.		Stonyhurst. 7 ft.		Kew. 10 ft.		Valencia. 23 ft.	Armagh. 207 ft.	Glasgow. 184 ft.	Aberdeen. 88 ft.	Falmouth. 211 ft.	Stonyhurst. 361 ft.	Kew. 34 ft.	
	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.								
															ins.	ins.	ins.	ins.	ins.	ins.	ins.	
Jan. 1–5	45·7	43°·5	38°·6	37°·4	32°·3	31°·2	32°·6	31°·0	48°·8	47°·3	38°·1	36°·5	46°·6	44°·7	29·038	28·971	29·096	29·266	28·990	28·852	29·267	Jan. 1–5
,, 6–10	46·6	44·2	43·5	42·2	40·8	39·0	38·8	37·4	49·1	47·4	43·5	42·0	47·1	45·6	·196	29·054	·137	·290	29·210	29·028	·503	,, 6–10
,, 11–15	45·9	43·1	40·0	38·6	35·5	34·2	37·6	35·6	44·9	43·1	37·3	35·8	40·0	38·2	·788	·557	·590	·726	·685	·445	·849	,, 11–15
,, 16–20	47·0	44·3	42·4	40·8	41·9	40·3	41·0	39·7	48·6	47·2	44·2	42·9	47·5	46·0	29·683	·476	·474	·578	29·711	·423	29·962	,, 16–20
,, 21–25	47·3	45·1	43·2	41·5	40·4	38·7	39·9	37·4	47·2	44·1	40·6	38·0	38·4	36·6	30·029	·799	·785	·874	30·024	·761	30·281	,, 21–25
,, 26–30	46·8	43·8	39·9	38·3	38·5	36·7	37·1	34·7	46·4	43·7	39·8	37·7	41·0	38·4	29·998	·587	·451	·475	29·917	·438	29·969	,, 26–30
Feb. 31–4	47·4	45·3	42·1	40·8	40·0	38·6	39·1	37·1	47·1	45·3	42·4	40·9	44·1	42·1	29·966	·630	·557	·616	29·937	·545	30·064	Feb. 31–4
,, 5–9	49·7	48·8	45·8	44·4	44·4	42·6	41·8	38·9	50·0	48·9	44·9	43·7	47·5	45·4	30·136	·824	·710	·731	30·056	·671	30·171	,, 5–9
,, 10–14	51·0	49·5	47·1	45·7	42·7	41·0	37·0	35·6	51·2	49·7	45·8	44·6	49·2	46·8	29·815	·492	·415	·513	29·778	·355	29·856	,, 10–14
,, 15–19	46·5	43·7	42·3	40·7	41·9	39·8	41·0	38·2	47·1	45·0	42·7	41·0	44·9	42·4	29·956	·577	·458	·496	·778	·400	·883	,, 15–19
,, 20–24	46·3	43·9	41·2	39·0	39·8	36·6	38·6	36·5	43·9	41·0	39·2	36·6	40·4	37·5	30·113	·695	·539	·554	·721	·352	·697	,, 20–24
,, 25–1	45·0	42·4	36·8	35·2	32·8	30·1	30·7	28·5	43·2	40·4	31·7	29·3	37·3	(33·7)	29·970	·673	·605	·627	·795	·444	·857	,, 25–1
March 2–6	47·2	45·3	43·0	41·3	40·3	38·1	38·6	36·7	46·6	44·5	41·6	40·1	42·7	41·0	30·102	·800	·727	·797	·858	·567	·967	March 2–6
,, 7–11	45·9	43·6	41·2	39·4	38·2	*36·2	37·1	35·7	42·3	39·6	35·2	33·1	35·2	32·5	30·057	·785	·733	·791	·803	·567	·936	,, 7–11
,, 12–16	46·8	43·9	42·6	40·5	39·5	37·3	39·0	35·6	47·1	44·9	41·4	39·4	45·3	41·8	29·966	·516	·335	·310	·758	·281	·775	,, 12–16
,, 17–21	41·2	38·3	37·2	34·9	35·2	33·4	35·5	33·1	40·1	37·0	35·4	32·9	37·1	34·7	·571	·333	·293	·391	·338	29·129	·480	,, 17–21
,, 22–26	43·0	40·7	38·4	36·8	37·7	35·5	37·2	35·2	42·7	40·7	38·9	36·7	41·2	38·8	·254	·302	·184	·396	·067	28·932	·303	,, 22–26
,, 27–31	47·3	45·0	43·9	42·0	41·2	39·5	40·6	38·4	48·3	46·3	43·2	41·4	47·0	44·6	·746	·522	·504	·616	·611	29·352	·777	,, 27–31
April 1–5	46·7	44·6	43·9	42·7	43·7	41·1	42·4	40·3	48·6	46·8	45·2	43·4	50·1	47·3	·446	·208	·195	·327	·310	·076	·524	April 1–5
,, 6–10	48·7	46·3	44·0	42·1	40·9	39·0	40·4	39·0	48·7	47·0	44·8	42·5	48·7	46·3	·356	·316	·393	·569	·284	·155	·533	,, 6–10
,, 11–15	51·2	49·7	44·0	42·1	40·2	36·7	37·2	34·4	50·2	48·5	41·3	38·9	46·7	43·5	·733	·658	·763	29·941	·666	·571	·945	,, 11–15
,, 16–20	47·6	44·4	42·7	39·3	42·1	37·0	40·5	37·3	45·0	42·1	42·0	37·5	42·6	38·4	·739	·682	·794	30·008	·536	·534	·785	,, 16–20
,, 21–25	48·6	46·4	45·5	43·1	40·7	38·5	39·4	37·1	48·9	46·3	44·4	41·9	46·0	43·0	·622	·451	·529	29·753	·514	·326	·720	,, 21–25
,, 26–30	48·4	45·9	42·9	39·5	41·2	37·6	40·9	37·7	47·6	45·4	41·2	37·9	44·4	41·0	29·759	·779	·865	30·044	·586	·601	29 869	,, 26–30
May 1–5	48·6	44·3	42·6	38·7	40·2	34·9	36·9	33·6	45·3	41·3	40·3	35·8	40·8	36·4	30·080	·969	·964	30·072	·866	·766	30·105	May 1–5
,, 6–10	49·2	45·9	45·8	42·0	43·5	39·3	42·8	39·5	48·1	44·9	45·4	41·5	49·4	44·0	29·506	·452	·532	29·713	·393	·310	29·640	,, 6–10
,, 11–15	50·7	48·4	47·4	45·5	45·6	42·3	43·5	41·9	51·5	49·4	47·1	44·8	51·4	48·6	29·577	·447	·511	·687	·435	·282	·627	,, 11–15
,, 16–20	53·2	50·3	51·4	48·5	50·2	46·6	46·6	45·2	53·0	50·2	48·7	46·6	51·5	48·5	30·027	29·715	29·679	29·821	29·813	·515	29·924	,, 16–20
,, 21–25	52·6	48·8	48·5	44·9	48·6	43·1	46·1	42·7	50·1	46·0	46·6	42·6	48·0	44·1	30·292	30·119	30·103	30·219	30·030	·889	30·177	,, 21–25
,, 26–30	52·1	49·2	50·7	47·5	49·6	46·4	50·1	46·8	52·8	49·3	50·8	46·8	54·0	49·2	29·496	29·191	29·126	29·195	29·467	·127	29·646	,, 26–30
June 31–4	52·4	50·4	51·2	49·0	52·0	48·6	51·6	48·3	54·6	52·6	56·7	52·8	59·2	54·6	·376	·232	·266	·405	·400	·178	29·678	June 31–4
,, 5–9	53·4	51·2	53·0	50·5	52·4	49·4	53·5	49·6	54·9	52·1	54·3	50·3	58·4	53·4	·819	·569	·546	·638	·827	·530	30·029	,, 5–9
,, 10–14	58·4	55·6	56·7	52·7	56·2	50·9	53·5	49·3	59·2	57·1	56·2	52·3	63·1	58·2	29·962	·802	·795	29·918	·779	·661	29·996	,, 10–14
,, 15–19	63·3	59·4	62·4	57·0	59·2	52·8	53·0	50·2	61·7	57·6	61·8	54·9	65·0	57·6	30·004	·917	·972	30·150	·824	·776	30·061	,, 15–19
,, 20–24	57·0	53·5	58·1	54·6	55·0	51·0	51·3	48·4	58·3	55·2	57·7	52·7	60·7	55·6	29·950	·686	·656	29·775	29·708	·477	29·851	,, 20–24
,, 25–29	58·4	56·2	57·8	55·0	55·7	52·9	52·8	50·2	60·2	56·1	56·6	54·0	61·6	55·1	30·156	29·867	29·782	29·859	30·019	29·712	30·140	,, 25–29

NOTE.—Means which are enclosed in brackets are a little doubtful, one of the five daily means being approximate.

* Two of the five daily means are approximate.

TABLE II.—Part 2.

Five-Day Means of the Dry-Bulb and Wet-Bulb Thermometers, and Barometer, from the continuous Records at the Seven British Observatories, July to December 1877.

Five-Day Periods.	Thermometers.														Barometer.							Five-Day Periods.
	Valencia. 12 ft.		Armagh. 4 ft.		Glasgow. 7 ft.		Aberdeen. 41 ft.		Falmouth. 11 ft.		Stonyhurst. 7 ft.		Kew. 10 ft.		Valencia. 23 ft.	Armagh. 207 ft.	Glasgow. 184 ft.	Aberdeen. 88 ft.	Falmouth. 211 ft.	Stonyhurst. 361 ft.	Kew. 34 ft.	
	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.								
															ins.	ins.	ins.	ins.	ins.	ins.	ins.	
June 30–4	56°·7	53°·0	54°·4	51°·4	53°·6	49°·9	54°·5	49°·8	59°·8	56°·0	56°·0	51°·9	61°·3	56°·6	30·068	29·771	29·693	29·741	29·882	29·607	30·000	June 30–4
July 5–9	56·3	52·1	53·0	50·8	53·1	49·9	52·2	49·2	56·8	52·4	53·5	50·2	55·7	51·6	30·187	·882	·795	·876	·973	·661	30·066	July 5–9
„ 10–14	57·8	55·8	57·7	55·2	56·0	53·7	57·3	53·5	59·6	56·9	58·0	55·1	62·7	58·1	29·837	·577	·539	·614	·705	·443	29·859	„ 10–14
„ 15–19	56·8	54·6	56·4	54·4	56·4	54·0	(55·4)	(54·4)	58·8	56·6	55·7	53·7	59·7	56·8	·691	·304	·259	(·421)	·469	·064	·537	„ 15–19
„ 20–24	57·9	54·9	56·6	53·8	56·5	53·5	56·9	53·6	59·2	56·7	58·0	54·9	60·9	56·8	29·567	·328	·335	·446	·565	·275	29·768	„ 20–24
„ 25–29	58·8	57·5	58·3	55·9	56·5	53·9	58·9	54·1	61·3	59·2	58·6	55·9	62·8	58·9	30·099	·788	·712	·750	·944	·626	30·042	„ 25–29
Aug. 30–3	58·4	55·7	56·3	54·0	55·5	52·1	54·3	50·7	59·1	56·1	56·5	53·4	62·3	57·5	30·109	·813	*·726	·765	·892	·599	29·984	Aug. 30–3
„ 4–8	60·0	58·1	58·6	56·8	57·3	54·3	54·7	52·9	60·8	58·5	60·2	56·3	62·8	58·5	29·538	·446	·524	·681	·538	·369	·799	„ 4–8
„ 9–13	58·4	54·8	57·1	54·6	57·0	54·5	56·3	54·8	59·3	56·5	58·5	55·5	60·6	56·9	·898	·710	·701	·827	·732	·507	·866	„ 9–13
„ 14–18	60·8	59·2	60·8	59·0	57·5	55·5	55·2	53·4	62·2	60·6	61·5	58·7	64·1	59·8	·784	·647	(·696)	·849	·700	·510	·894	„ 14–18
„ 19–23	58·0	55·2	55·3	53·6	51·3	49·2	50·5	48·2	60·7	58·6	57·0	55·1	63·8	59·4	·744	·491	·495	·642	·582	·308	·745	„ 19–23
„ 24–28	57·3	55·3	55·2	53·0	53·4	50·9	51·2	49·7	59·9	58·3	55·9	53·7	60·4	57·6	·724	·567	·585	·718	·607	·400	·818	„ 24–28
Sept. 29–2	54·3	50·9	50·9	48·5	50·8	47·9	49·6	46·4	56·6	53·3	52·4	49·5	56·4	52·5	*29·913	·621	·571	·648	·764	·459	29·916	Sept. 29–2
„ 3–7	54·8	51·6	49·5	47·1	49·4	46·3	47·9	45·0	53·6	49·7	50·2	47·2	52·4	49·1	†30·124	·898	·862	·946	·874	·679	30·004	„ 3–7
„ 8–12	57·7	54·7	53·3	50·9	52·3	49·2	51·3	48·7	57·2	55·4	53·8	50·7	57·4	53·7	29·673	·572	·644	·804	·614	·509	29·888	„ 8–12
„ 13–17	56·0	53·5	(53·7)	(52·2)	53·7	50·9	53·3	50·2	57·7	*55·3	53·4	50·9	57·8	55·0	30·047	·821	·765	·827	·918	·641	30·066	„ 13–17
„ 18–22	53·3	50·0	50·3	48·2	50·0	46·6	48·6	46·4	53·3	49·7	49·4	46·5	50·4	48·2	·137	29·910	·848	29·910	·833	·632	29·952	„ 18–22
„ 23–27	54·2	51·5	51·8	50·0	50·1	46·8	48·8	46·2	54·4	51·1	49·0	46·3	47·6	45·8	·248	30·007	·960	30·052	·993	·777	30·144	„ 23–27
Oct. 28–2	55·4	52·6	51·3	49·8	50·0	47·9	50·0	47·6	56·6	54·0	50·8	48·2	47·8	46·1	·077	29·964	29·994	·113	29·910	·815	·158	Oct. 28–2
„ 3–7	57·1	54·9	53·7	51·7	51·6	49·2	52·4	50·0	55·4	51·9	47·0	45·1	45·7	43·8	·272	30·108	30·100	30·182	30·110	·974	·324	„ 3–7
„ 8–12	53·1	50·1	48·0	46·5	45·7	43·2	45·1	42·2	52·1	48·8	47·1	43·9	48·1	44·9	30·155	29·842	29·737	29·762	29·962	·637	30·062	„ 8–12
„ 13–17	50·3	47·5	48·4	46·5	46·0	43·5	44·4	41·9	52·1	48·9	(48·1)	(44·5)	50·5	46·6	29·818	·497	·418	·460	·780	·386	29·953	„ 13–17
„ 18–22	55·2	53·1	50·4	49·0	47·4	45·6	43·7	42·2	53·2	50·3	(47·3)	(46·1)	46·9	44·1	(·780)	·596	·610	·727	·816	·547	30·054	„ 18–22
„ 23–27	52·1	49·1	46·5	45·2	45·7	43·8	43·8	41·3	52·4	50·1	47·0	45·3	49·1	47·6	·499	·215	·220	·355	·423	·118	29·586	„ 23–27
Nov. 28–1	53·9	51·4	49·8	48·2	49·3	47·0	47·1	44·3	54·1	51·4	49·9	47·9	50·9	48·2	·893	·605	·529	·575	·857	·485	·993	Nov. 28–1
„ 2–6	52·0	49·9	48·2	46·7	48·1	46·2	47·5	44·8	52·7	50·2	48·2	46·1	48·2	46·1	·695	29·417	29·364	·432	·679	29·351	·873	„ 2–6
„ 7–11	49·1	46·4	45·0	43·4	46·0	44·1	46·0	43·7	51·6	49·3	47·1	45·1	51·5	49·5	·149	28·930	28·943	·071	·233	28·922	·489	„ 7–11
„ 12–16	49·1	46·7	44·3	42·4	45·3	42·8	45·2	42·0	49·8	47·6	45·4	43·5	46·0	44·3	·647	29·353	29·304	·365	·584	29·289	·780	„ 12–16
„ 17–21	48·8	45·9	42·4	40·7	41·0	39·3	40·4	38·1	47·9	45·5	41·8	39·9	40·8	39·5	·870	·534	·450	·499	·763	·391	·890	„ 17–21
„ 22–26	45·6	42·9	39·8	38·5	38·4	36·8	36·5	34·6	46·6	44·2	39·2	37·5	42·3	39·7	·578	29·236	29·160	29·218	29·400	29·058	·520	„ 22–26
Dec. 27–1	45·6	42·5	39·0	37·9	39·7	37·9	40·2	38·7	46·2	44·0	40·7	39·3	43·3	41·6	·159	28·792	28·741	28·867	28·996	28·638	·145	Dec. 27–1
„ 2–6	47·6	45·7	41·4	40·4	41·2	39·8	40·7	39·7	45·9	43·9	42·3	40·9	44·0	42·7	·864	29·680	29·721	29·861	29·727	29·554	29·897	„ 2–6
„ 7–11	47·8	45·5	43·3	42·4	42·8	41·3	41·7	40·1	46·9	43·8	41·0	39·4	40·1	38·5	29·855	·585	·562	·641	29·817	·539	30·029	„ 7–11
„ 12–16	45·8	43·1	39·9	38·8	41·3	39·8	39·1	37·4	44·9	42·5	41·1	39·6	40·5	38·9	30·188	29·832	29·703	29·732	30·048	29·646	·143	„ 12–16
„ 17–21	48·8	47·6	44·4	43·4	44·4	42·8	41·0	39·2	47·2	46·0	41·4	40·7	40·7	39·8	30·519	30·239	30·168	30·208	30·348	30·083	30·501	„ 17–21
„ 22–26	45·4	42·9	38·6	37·4	36·8	34·9	34·4	32·2	44·7	43·2	37·8	36·2	39·8	37·7	29·956	29·558	29·397	29·379	(29·739)	29·330	29·816	„ 22–26
„ 27–31	46·9	44·9	39·5	38·3	37·5	36·8	35·4	33·8	47·2	45·2	38·2	37·0	40·9	39·0	29·755	29·480	29·410	29·472	29·665	29·311	29·785	„ 27–31

Note.—Means which are enclosed in brackets are a little doubtful, one of the five daily means being approximate.

* Two of the five daily means are approximate.

† Three of the five daily means are approximate.

APPENDIX I. A.

TABLE I.—MEAN MONTHLY RESULTS from the continuous RECORDS at the SEVEN BRITISH OBSERVATORIES for the Year 1877. In millimetres and degrees centigrade.

VALENCIA.

1877. Months.	Thermometer.					Barometer.					Vapour Tension.
	Means.	Extremes.				Means.	Extremes.				
		Maximum.		Minimum.			Maximum.		Minimum.		
		Day.	Ther.	Day.	Ther.		Day.	Bar.	Day.	Bar.	
	° C.	D. H.	° C.	D. H.	° C.	mm.	D. H.	mm.	D. H.	mm.	mm.
January - -	8·11	16th, 1 p.m.	11·89	**2nd, 3 a.m.**	**0·78**	752·67	21st, 8 p.m. 9 p.m.	772·53	**6th, 8 p.m.**	**719·41**	6·60
February - -	8·61	6th, 9 p.m.	12·28	**28th, 7 a.m.**	**0·78**	61·73	28th, 11 a.m.	69·07	26th, 1 a.m.	48·45	7·05
March - -	7·44	29th, Noon	13·17	20th, 1 a.m.	1·11	56·70	8th, 11 p.m.	69·10	24th, 7 p.m.	29·15*	6·32
April - -	9·17	15th, 2 p.m.	15·39	19th, 4 a.m.	3·11	52·06	30th, Midnt.	69·15	5th, 4 a.m.	32·65	7·24
May - -	10·61	20th, 6 p.m.	16·67	7th, 5 a.m.	2·78	57·16	21st, 11 p.m.	70·29	28th, 2 a.m.	34·68	7·51
June - -	14·06	**17th, Noon**	**23·56**	24th, 4 a.m.	8·50	59·73	30th, 9 a.m.	68·42	1st, 1 a.m.	37·94	9·85
July - -	14·22	30th, 2 p.m.	19·61	5th, 8 a.m.	9·11	59·73	7th, 10 p.m.	70·88	23rd, 1 p.m. 2 p.m. 3 p.m.	41·72	10·03
August - -	14·72	15th, 5 p.m. 6 p.m.	21·94	23rd, 4 a.m.	7·50	56·55	2nd, 1 p.m.	66·79	8th, 2 a.m.	33·11	10·39
September -	12·78	10th, 4 p.m.	19·44	22nd, 6 a.m.	5·83	63·26†	18th, 1 a.m.	73·39	11th, 1 p.m.	45·88	8·86
October - -	12·11	6th, 3 p.m. 4 p.m.	18·00	17th, 1 a.m.	4·06	59·32‡	**6th, 10 p.m.**	**78·75**	14th, 6 p.m.	35·29	8·68
November -	9·17	15th, 8 p.m.	13·39	27th, Midt.	3·72	50·30	1st, 1 a.m.	72·48	11th, Noon	19·44	7·08
December -	8·39	11th, 7 p.m.	12·28	27th, 9 a.m.	3·22	762·22	19th, 5 p.m.	778·65	6th, 5 a.m.	739·76	6·95
Annual - -	10·78	—	—	—	—	757·62	—	—	—	—	8·05

* Approximate reading, trace faint. † Means for five days are approximate. ‡ Mean for one day is approximate.

ARMAGH.

	° C.	D. H.	° C.	D. H.	° C.	mm.	D. H.	mm.	D. H.	mm.	mm.
January - -	5·11	16th, 3 p.m.	10·72	13th, 3 a.m.	−0·44	747·13	21st, Midnt.	768·11	6th, Midnt.	718·43	5·81
February - -	5·94	14th, 4 p.m. 15th, Noon	11·06	**28th, 1 a.m.**	**−2·39**	52·82	28th, 8 p.m.	65·52	26th, 1 a.m.	33·84	6·02
March - -	5·00	2nd, 1 p.m.	13·06	19th, 6 a.m.	−1·56	49.87 ~~50·69~~	1st, 1 a.m.	64·25	24th, 8 p.m.	28·91	5·56
April - -	6·56	14th, 4 p.m.	11·61	19th, 5 a.m.	0·72	49·69	30th, Midnt.	65·69	4th, 9 p.m.	29·65	5·99
May - -	8·78	16th, 2 p.m.	16·83	4th, 5 a.m.	−0·50	52·77	1st, 8 a.m.	67·27	28th, 8 a.m.	23·86	6·53
June - -	13·72	**20th, 3 p.m.**	**23·33**	24th, 4 a.m.	5·61	54·40	28th, 5 a.m.	61·76	1st, 5 a.m.	35·50	9·22
July - -	13·56	30th, 3 p.m.	20·94	6th, 4 a.m.	5·56	52·18	7th, 9 p.m.	63·18	15th, 6 p.m.	33·48	9·70
August - -	13·67	19th, 2 p.m.	20·56	23rd, 6 a.m.	5·11	51·55	12th, 11 a.m.	59·95	8th, 5 a.m. 7 a.m.	36·69	10·08
September -	10·78*	13th, 2 p.m.	16·44	22nd, 3 a.m.	3·33	58·28	17th, 9 p.m.	69·66	13th, 9 p.m.	40·83	8·32
October - -	9·83	13th, 1 p.m.	15·94	18th, 7 a.m.	1·11	52·94	**6th, 10 a.m.**	**73·52**	15th, 2 a.m.	25·81	8·02
November -	6·28	15th, 9 p.m.	13·28	24th, 6 a.m.	−0·33	42·66	1st, 10 a.m.	66·20	**11th, 4 p.m.**	**10·96**	6·29
December -	5·06	11th, 8 p.m.	10·44	3rd, 1 a.m. 26th, 8 p.m.	−1·11	754·70	19th, 9 p.m.	773·21	1st, 1 a.m.	732·04	5·99
Annual - -	8·69	—	—	—	—	751·~~65~~ 58	—	—	—	—	7·29

* Mean for one day is approximate.

Table I.—Mean Monthly Results, &c.—*continued.*

GLASGOW.

1877. Months.	Thermometer.					Barometer.					Vapour Tension.
	Means.	Extremes.				Means.	Extremes.				
		Maximum.		Minimum.			Maximum.		Minimum.		
		Day.	Ther.	Day.	Ther.		Day.	Bar.	Day.	Bar.	
	° C.	D. H.	° C.	D. H.	° C.	mm.	D. H.	mm.	D. H.	mm.	mm.
January - -	3·44	19th, 1 p.m. 2 p.m.	10·22	3rd, 1 a.m.	−3·94	747·45	22nd, 10 a.m.	768·87	7th, 2 a.m.	722·36	5·11
February - -	4·78	15th, Noon	10·67	**27th, 6 a.m.**	**−5·56**	50·05	28th, 10 p.m.	64·83	19th, 11 p.m.	32·45	5·28
March - -	3·67	2nd, 2 p.m. 3 p.m. 31st, Noon	11·00	1st, 6 a.m.	−4·06	48·75	1st, 1 a.m.	64·50	24th, 3 p.m.	33·74	4·97
April - -	5·28	20th, 2 p.m.	12·44	12th, 6 a.m.	−1·17	51·57	30th, Midnt.	66·71	4th, 10 p.m.	26·66	5·05
May - -	8·00	25th, 3 p.m. 31st, 5 p.m.	15·00	8th, 5 a.m.	−0·89	52·92	21st, 10 p.m.	67·98	28th, 1 p.m.	23·68	5·71
June - -	12·89	**17th, 5 p.m.**	**22·61**	12th, 4 a.m.	6·22	54·04	16th, 8 a.m.	63·05	1st, 2 p.m.	35·60	8·25
July - -	13·11	30th, 9 a.m.	18·72	6th, 1 a.m. 8th, 1 a.m.	7·72	50·81	8th, 10 a.m.	60·46	15th, 6 p.m.	33·84	9·24
August - -	12·67	6th, ?	20·72*	23rd, 6 a.m.	6·00	51·72†	12th, 9 p.m. 10 p.m.	61·71	28th, 7 a.m. 9 a.m.	39·21	9·04
September -	10·56	11th, Noon	17·33	8th, 6 a.m.	3·00	57·75	17th, 8 p.m.	69·02	14th, 1 a.m.	39·51	7·54
October -	8·67	14th, 8 p.m.	15·72	17th, 11 p.m.	0·22	52·03	**6th, 9 a.m.**	**72·78**	15th, 5 a.m.	24·95	7·03
November -	6·28	15th, 11 p.m.	13·50	25th, 0·3 a.m.	−0·61	41·39	1st, 11 a.m.	63·89	**11th, 5 p.m.**	**10·63**	6·07
December -	4·83	11th, 10 p.m.	10·50	28th, 9 a.m.	−3·00	752·92	19th, 9 p.m.	771·97	1st, 1 a.m.	730·18	5·63
Annual - -	7·85	—	—	—	—	750·95	—	—	—	—	6·58

* Corrected reading of Phillips' maximum thermometer. † Means for three days are approximate.

ABERDEEN.

	° C.	D. H.	° C.	D. H.	° C.	mm.	D. H.	mm.	D. H.	mm.	mm.
January - -	3·22	19th, 4 p.m.	8·56	3rd, 8 a.m.	−5·61	750·30	22nd, 10 a.m.	771·26	7th, 5 a.m.	727·59	4·82
February - -	3·50	15th, 2 p.m.	10·39	27th, 8 a.m.	−6·11	51·04	28th, 8 p.m.	67·30	25th, 8 a.m.	32·96	4·75
March - -	3·22	2nd, 1 p.m.	11·33	1st, 6 a.m.	−4·56	50·96	1st, 1 a.m.	66·69	16th, 5 a.m.	39·56	4·70
April - -	4·56	4th, 3 p.m.	10·17	12th, 5 a.m.	−1·06	56·24	30th, Midnt.	69·18	4th, 5 a.m.	32·96	5·02
May - -	6·94	30th, Noon	14·78	3rd, 2 a.m.	−1·39	56·32	21st, 11 p.m.	71·64	28th, 4 p.m.	26·61	5·92
June - -	11·61	29th, 3 p.m.	18·83	13th, 3 a.m.	4·33	57·01	16th, 10 a.m.	67·15	1st, 8 p.m.	38·80	7·92
July - -	13·33*	**30th, 3 p.m.**	**21·67**	8th, 3 a.m.	5·44	52·97*	7th, Midnt.	62·64	15th, 5 p.m.	40·60	9·02
August - -	11·78	16th, 3 p.m.	17·83	25th, 5 a.m.	2·56	54·92	12th, 11 p.m.	65·69	8th, 7 a.m.	41·72	8·81
September -	9·94	14th, Noon	17·67	9th, 5 a.m.	1·83	60·15	17th, 6 p.m.	71·99	14th, 4 a.m.	40·93	7·34
October - -	7·89	6th, 3 p.m.	16·94	19th, 5 a.m.	−1·33	54·04	**6th, 9 a.m. 10 a.m.**	**73·85**	15th, 7 a.m.	27·78	6·58
November -	6·00	16th, 1 a.m.	13·61	24th, 8 a.m.	−2·22	43·39	1st, Noon	64·45	**11th, 8 p.m.**	**16·11**	5·71
December -	3·83	22nd, 4 p.m.	11·44	**25th, 11 p.m.**	**−6·94**	754·37	19th, 9 p.m.	773·80	1st, 1 a.m.	732·96	5·18
Annual - -	7·15	—	—	—	—	753·48	—	—	—	—	6·31

* Mean for one day is approximate.

Table I.—Mean Monthly Results, &c.—*continued.*

FALMOUTH.

1877. Months.	Thermometer.					Barometer.					Vapour Tension.
	Means.	Extremes.				Means.	Extremes.				
		Maximum.		Minimum.			Maximum.		Minimum.		
		Day.	Ther.	Day.	Ther.		Day.	Bar.	Day.	Bar.	
	° C.	D. H.	° C.	D. H.	° C.	mm.	D. H.	mm.	D. H.	mm.	mm.
January - -	8·61	3rd, 10 a.m.	12·44	13th, 4 a.m.	3·17	751·80	21st, 11 a.m. Noon	771·51	1st, 6 a.m.	723·17	7·14
February - -	8·44	14th, 1 p.m.	12·89	28th, 8 a.m.	1·61	57·75	4th, 10 p.m. 11 p.m.	66·81	26th, 5 a.m.	41·92	7·03
March - -	6·94	29th, 1 p.m.	13·17	**1st, 5 a.m.**	**0·89**	51·57	1st, 1 a.m.	66·38	25th, 5 a.m.	23·43	6·17
April - -	9·00	21st, 1 p.m.	14·28	17th, Midnt.	2·72	48·86	30th, Midnt.	63·00	4th, 11 a.m.	31·33	7·19
May - -	10·11	14th, 4 p.m. 26th, 1 p.m.	15·72	5th, 5 a.m.	2·89	53·18	1st, 5 p.m. 9 p.m.	65·88	28th, 2 a.m. 9 a.m.	37·94	7·21
June - -	14·67	**29th, 2 p.m.**	**21·61**	7th, 5 a.m.	8·67	56·53	28th, 7 a.m.	63·76	1st, 6 a.m.	33·92	10·13
July - -	15·17	29th, 1 p.m.	20·67	6th, 4 a.m.	9·94	55·89	9th, 10 a.m.	66·69	14th, 5 p.m.	38·77	10·54
August - -	15·61	19th, 1 p.m. 3 p.m.	20·78	24th, 6 a.m.	8·89	53·53	23rd, 10 p.m.	61·58	8th, 10 a.m.	37·40	11·25
September -	13·00	14th, 3 p.m.	17·39	22nd, 5 a.m.	6·28	58·21	4th, 9 p.m. 10 p.m. 11 p.m.	66·76	11th, 10 a.m.	47·05	9·02
October - -	11·89	14th, Noon	17·00	17th, 2 a.m.	5·00	57·29	6th, 8 p.m.	72·45	14th, 11 p.m.	33·31†	8·38
November -	9·61	9th, 1 p.m.	13·83	24th, 8 p.m.	4·22	48·70	1st, 11 a.m.	69·10	**11th, 6 p.m.**	**20·81**	7·41
December -	7·83	6th, 3 a.m.	12·00	26th, 1 a.m.	2·78	758·63*	**19th, 10 p.m.**	**773·26**	1st, 1 a.m.	732·98	6·75
Annual - -	10·91	—	—	—	—	754·33	—	—	—	—	8·19

* Mean for one day is approximate. † Probable minimum.

STONYHURST.

	° C.	D. H.	° C.	D. H.	° C.	mm.	D. H.	mm.	D. H.	mm.	mm.
January - -	4·72	19th, Noon	12·17	2nd, 9 a.m.	−1·72	745·00	22nd, 10 a.m.	765·88	1st, 10 a.m.	719·80	5·51
February - -	5·33	2nd, 4 p.m. 15th, 3 p.m.	10·67	28th, Midnt.	−6·11	47·84	28th, 9 p.m.	61·22	20th, 3 a.m.	26·02	5·76
March - -	3·83	30th, 1 p.m.	10·94	**1st, 7 a.m.**	**−8·89***	44·81	1st, 1 a.m.	60·92	25th, 4 a.m. 5 a.m.	24·54	5·02
April - -	6·17	22nd, 2 p.m. 3 p.m.	12·22	12th, 6 a.m.	0·44	46·16	30th, Midnt.	61·00	4th, 5 p.m.	23·81	5·58
May - -	8·17	31st, 1 p.m.	17·28	4th, 5 a.m.	−2·67	48·57	1st, 8 a.m.	62·59	28th, 11 a.m.	25·44	6·09
June - -	14·06	**18th, 3 p.m.**	**24·61**	24th, 4 a.m.	4·94	51·21	16th, 8 a.m.	58·38	1st, Noon	31·64	8·78
July - -	13·78	30th, 3 p.m. 5 p.m.	20·28	19th, 3 a.m.	6·33	48·05	30th, Noon	58·38	15th, 11 a.m. Noon	26·40	9·57
August - -	14·28	6th, 2 p.m.	21·89	24th, 2 a.m.	6·61	47·43	12th, 9 p.m.	55·26	8th, 6 p.m.	34·70	10·00
September -	10·67	11th, 11 a.m.	17·72	22nd, 6 a.m.	2·89	53·45	17th, 10 p.m.	63·89	12th, 5 a.m.	41·21	7·77
October - -	8·78†	14th, 2 p.m.	17·17	18th, ?	−1·67	49·92	**6th, 9 a.m.**	**69·69**	15th, 3 a.m.	26·10	7·03
November -	6·67	16th, 0·15 a.m.	13·89	25th, 7 a.m.	−0·44	40·19	1st, Noon	61·58	**11th, 7 p.m.**	**13·65**	6·24
December -	4·61	6th, 1 p.m.	9·78	20th, 7 a.m.	−2·17	750·71	19th, Midnt. 20th, 1 a.m.	768·44	1st, 1 a.m.	725·56	5·66
Annual - -	8·42	-	—	—	—	747·78	—	—	—	—	6·91

* Approximate reading, trace faint. † Means for two days are approximate.

Table I.—Mean Monthly Results, &c.—*continued.*

KEW.

1877. Months.	Thermometer.					Barometer.					Vapour Tension.
	Means.	Extremes.				Means.	Extremes.				
		Maximum.		Minimum.			Maximum.		Minimum.		
		Day.	Ther.	Day.	Ther.		Day.	Bar.	Day.	Bar.	
	°C.	D. H.	°C.	D. H.	°C.	mm.	D. H.	mm.	D. H.	mm.	mm.
January - -	6·28	19th, 2 p.m.	13·06	21st, 8 a.m.	−2·72	757·19	21st, 10 a.m.	778·24	1st, 9 a.m.	728·94	6·14
February - -	6·94	7th, 1 p.m.	14·22	28th, 6 a.m.	−2·78	59·55	28th, Midnt.	70·98	20th, 7 a.m.	37·53	5·97
March - -	5·06	29th, 2 p.m.	13·72	**23rd, 7 a.m.**	**−5·00**	55·05	1st, 10 a.m.	71·67	25th, 4 a.m.	31·69	5·26
April - -	8·00	4th, 2 p.m.	17·39	20th, 5 a.m.	0·67	55·10	30th, Midnt.	68·47	4th, 4 p.m.	35·19	6·24
May - -	9·67	8th, 3 p.m.	18·00	5th, 4 a.m.	−1·11	58·02	1st, 10 p.m.	71·72	28th, 6 a.m.	42·15	6·53
June - -	16·44	11th, 5 p.m.	27·33	7th, 4 a.m.	7·22	61·42	28th, 8 a.m.	68·21	1st, 11 a.m.	46·11	9·54
July - -	16·06	**31st, 4 p.m.**	**28·22**	8th, 4 a.m.	7·06	59·02	9th, 10 a.m.	69·13	15th, 2 a.m.	38·62	10·31
August - -	16·44	20th, 1 p.m.	26·11	24th, 6 a.m.	5·56	57·87	24th, 9 a.m.	66·25	26th, 2 a.m.	45·20	10·66
September -	11·44	11th, 2 p.m.	20·94	25th, 6 a.m.	1·39	62·69	27th, 10 a.m.	71·41	3rd, 5 a.m.	52·53	8·25
October - -	9·17	14th, 1 p.m.	18·33	18th, 8 a.m.	−1·67	61·71	6th, 8 a.m.	78·24	25th, 2 p.m.	41·03	7·08
November -	7·50	16th, 11 a.m.	14·44	4th, 4 a.m.	−1·67	53·13	17th, 1 a.m.	73·01	**11th, 11 p.m.**	**28·49**	6·65
December -	5·00	6th, 2 p.m.	11·83	28th, 7 a.m.	−2·28	762·12	**20th, 9 a.m.**	**778·53**	1st, 2 a.m.	739·13	5·66
Annual - -	9·83	—	—	—	—	758·57	—	—	—	—	7·36

TABLE II.—Part 1.

Five-Day Means of the Dry-Bulb and Wet-Bulb Thermometers, and Barometer, from the continuous Records at the Seven British Observatories, January to June 1877.

Five-Day Periods.	Thermometers.														Barometer.							Five-Day Periods.
	Valencia. 3·66 m.		Armagh. 1·22 m.		Glasgow. 2·13 m.		Aberdeen. 12·50 m.		Falmouth. 3·35 m.		Stonyhurst. 2·13 m.		Kew. 3·05 m.		Valencia. 7·01 m.	Armagh. 63·09 m.	Glasgow. 56·08 m.	Aberdeen. 26·82 m.	Falmouth. 64·31 m.	Stonyhurst. 110·08 m.	Kew. 10·36 m.	
	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.								
	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	
Jan. 1–5	7·61	6·39	3·67	3·00	0·17	−0·44	0·33	−0·56	9·33	8·50	3·39	2·50	8·11	7·06	737·55	735·85	739·02	743·34	736·33	732·83	743·37	Jan. 1–5
,, 6–10	8·11	6·78	6·39	5·67	4·89	3·89	3·78	3·00	9·50	8·56	6·39	5·56	8·39	7·56	41·56	37·96	40·07	43·95	41·92	37·29	49·37	,, 6–10
,, 11–15	7·72	6·17	4·44	3·67	1·94	1·22	3·11	2·00	7·17	6·17	2·94	2·11	4·44	3·44	56·60	50·74	51·57	55·02	53·99	47·89	58·15	,, 11–15
,, 16–20	8·33	6·83	5·78	4·89	5·50	4·61	5·00	4·28	9·22	8·44	6·78	6·06	8·61	7·78	53·94	48·67	48·62	51·26	54·65	47·33	61·02	,, 16–20
,, 21–25	8·50	7·28	6·22	5·28	4·67	3·72	4·39	3·00	8·44	6·72	4·78	3·33	3·56	2·56	62·72	56·88	56·53	58·78	62·59	55·92	69·13	,, 21–25
,, 26–30	8·22	6·56	4·39	3·50	3·61	2·61	2·83	1·50	8·00	6·50	4·33	3·17	5·00	3·56	61·93	51·50	48·05	48·65	59·88	47·71	61·20	,, 26–30
Feb. 31–4	8·56	7·39	5·61	4·89	4·44	3·67	3·94	2·83	8·39	7·39	5·78	4·94	6·72	5·61	61·12	52·59	50·74	52·23	60·39	50·43	63·61	Feb. 31–4
,, 5–9	9·83	9·33	7·67	6·89	6·89	5·89	5·44	3·83	10·00	9·39	7·17	6·50	8·61	7·44	65·44	57·51	54·62	55·16	63·41	53·63	66·33	,, 5–9
,, 10–14	10·56	9·72	8·39	7·61	5·94	5·00	2·78	2·00	10·67	9·83	7·67	7·00	9·56	8·22	57·29	49·08	47·13	49·62	56·34	45·61	58·33	,, 10–14
,, 15–19	8·06	6·50	5·72	4·83	5·50	4·33	5·00	3·44	8·39	7·22	5·94	5·00	7·17	5·78	60·87	51·24	48·22	49·18	56·34	46·75	59·02	,, 15–19
,, 20–24	7·94	6·61	5·11	3·89	4·33	2·56	3·67	2·50	6·61	5·00	4·00	2·56	4·67	3·06	64·86	54·24	50·28	50·66	54·90	45·53	54·29	,, 20–24
,, 25–1	7·22	5·78	2·67	1·78	0·44	−1·06	−0·72	−1·94	6·22	4·67	−0·17	−1·50	2·94	(0·94)	61·22	53·68	51·96	52·51	56·78	47·86	58·36	,, 25–1
March 2–6	8·44	7·39	6·11	5·17	4·61	3·39	3·67	2·61	8·11	6·94	5·33	4·50	5·94	5·00	64·58	56·91	55·05	56·83	58·38	50·99	61·15	March 2–6
,, 7–11	7·72	6·44	5·11	4·11	3·44	*2·33	2·83	2·06	5·72	4·22	1·78	0·61	1·78	0·28	63·44	56·53	55·21	56·68	56·99	50·99	60·36	,, 7–11
,, 12–16	8·22	6·61	5·89	4·72	4·17	2·94	3·89	2·00	8·39	7·17	5·22	4·11	7·39	5·44	61·12	49·69	45·10	44·46	55·84	43·73	56·27	,, 12–16
,, 17–21	5·11	3·50	2·89	1·61	1·78	0·78	1·94	0·61	4·50	2·78	1·89	0·50	2·83	1·50	51·09	45·05	44·03	46·52	45·17	39·86	48·78	,, 17–21
,, 22–26	6·11	4·83	3·56	2·67	3·17	1·94	2·89	1·78	5·94	4·83	3·83	2·61	5·11	3·78	43·04	~~44·26~~	41·26	46·64	38·29	34·86	44·29	,, 22–26
,, 27–31	8·50	7·22	6·61	5·56	5·11	4·17	4·78	3·56	9·06	7·94	6·22	5·22	8·33	7·00	55·53	49·84	49·39	52·23	52·11	45·53	56·32	,, 27–31
April 1–5	8·17	7·00	6·61	5·94	6·50	5·06	5·78	4·61	9·22	8·22	7·33	6·33	10·06	8·50	47·91	41·87	41·54	44·89	44·46	38·51	49·89	April 1–5
,, 6–10	9·28	7·94	6·67	5·61	4·94	3·89	4·67	3·89	9·28	8·33	7·11	5·83	9·28	7·94	45·63	44·61	46·57	51·04	43·80	40·53	50·13	,, 6–10
,, 11–15	10·67	9·83	6·67	5·61	4·56	2·61	2·89	1·33	10·11	9·17	5·17	3·83	8·17	6·39	55·21	53·30	55·97	60·49	53·50	51·09	60·59	,, 11–15
,, 16–20	8·67	6·89	5·94	4·06	5·61	2·78	4·72	2·94	7·22	5·61	5·56	3·06	5·89	3·56	55·36	53·91	56·75	62·19	50·20	50·15	56·53	,, 16–20
,, 21–25	9·22	8·00	7·50	6·17	4·83	3·61	4·11	2·83	9·39	7·94	6·89	5·50	7·78	6·11	52·38	48·05	50·02	55·72	49·64	44·86	54·87	,, 21–25
,, 26–30	9·11	7·72	6·06	4·17	5·11	3·11	4·94	3·17	8·67	7·44	5·11	3·28	6·89	5·00	55·87	56·37	58·56	63·10	51·47	51·86	58·66	,, 26–30
May 1–5	9·22	6·83	5·89	3·72	4·56	1·61	2·72	0·89	7·39	5·17	4·61	2·11	4·89	2·44	64·02	61·20	61·07	63·81	58·58	56·04	64·66	May 1–5
,, 6–10	9·56	7·72	7·67	5·56	6·39	4·06	6·00	4·17	8·94	7·17	7·44	5·28	9·67	6·67	49·44	48·07	50·10	54·70	46·57	44·46	52·84	,, 6–10
,, 11–15	10·39	9·11	8·56	7·50	7·56	5·72	6·39	5·50	10·83	9·67	8·39	7·11	10·78	9·22	51·24	47·94	49·57	54·04	47·64	43·75	52·51	,, 11–15
,, 16–20	11·78	10·17	10·78	9·17	10·11	8·11	8·11	7·33	11·67	10·11	9·28	8·11	10·83	9·17	62·67	54·75	53·83	57·44	57·24	49·67	60·05	,, 16–20
,, 21–25	11·44	9·33	9·17	7·17	9·22	6·17	7·83	5·94	10·06	7·78	8·11	5·89	8·89	6·72	69·40	65·01	64·61	67·55	62·75	59·17	66·48	,, 21–25
,, 26–30	11·17	9·56	10·39	8·61	9·78	8·00	10·06	8·22	11·56	9·61	10·44	8·22	12·22	9·56	49·18	41·44	39·78	41·54	48·45	39·81	52·99	,, 26–30
June 31–4	11·33	10·22	10·67	9·44	11·11	9·22	10·89	9·06	12·56	11·44	13·72	11·56	15·11	12·56	46·13	42·48	43·34	46·88	46·75	41·10	53·80	June 31–4
,, 5–9	11·89	10·67	11·67	10·28	11·33	9·67	11·94	9·78	12·72	11·17	12·39	10·17	14·67	11·89	57·39	51·04	50·45	52·79	57·59	50·05	62·72	,, 5–9
,, 10–14	14·67	13·11	13·72	11·50	13·44	10·50	11·94	9·61	15·11	13·94	13·44	11·28	17·28	14·56	61·02	56·96	56·78	59·90	56·37	53·38	61·88	,, 10–14
,, 15–19	17·39	15·22	16·89	13·89	15·11	11·56	11·67	10·11	16·50	14·22	16·56	12·72	18·33	14·22	62·09	59·88	61·27	65·80	57·51	56·29	63·54	,, 15–19
,, 20–24	13·89	11·94	14·50	12·56	12·78	10·56	10·72	9·11	14·61	12·89	14·28	11·50	15·94	13·11	60·72	54·01	53·25	56·27	54·57	48·70	58·21	,, 20–24
,, 25–29	14·67	13·44	14·33	12·78	13·17	11·61	11·56	10·11	15·67	13·39	13·67	12·22	16·44	12·83	765·95	758·61	756·45	758·41	762·47	754·67	765·54	,, 25–29

Note.—Means which are enclosed in brackets are a little doubtful, one of the five daily means being approximate.

* Two of the five daily means are approximate.

TABLE II.—PART 2.

FIVE-DAY MEANS of the DRY-BULB and WET-BULB THERMOMETERS, and BAROMETER, from the continuous RECORDS at the SEVEN BRITISH OBSERVATORIES, July to December 1877.

Five-Day Periods.	THERMOMETERS.														BAROMETER.							Five-Day Periods.
	Valencia. 3·66 m.		Armagh. 1·22 m.		Glasgow. 2·13 m.		Aberdeen. 12·50 m.		Falmouth. 3·35 m.		Stonyhurst. 2·13 m.		Kew. 3·05 m.		Valencia. 7·01 m.	Armagh. 68·09 m.	Glasgow. 56·08 m.	Aberdeen. 26·82 m.	Falmouth. 64·31 m.	Stonyhurst. 110·03 m.	Kew. 10·36 m.	
	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.								
	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	° C.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	
June 30–4	13·72	11·67	12·44	10·78	12·00	9·94	12·50	9·89	15·44	13·33	13·33	11·06	16·28	13·67	763·71	756·17	754·19	755·41	758·99	752·01	761·99	June 30–4
July 5–9	13·50	11·17	11·67	10·44	11·72	9·94	11·22	9·56	13·78	11·33	11·94	10·11	13·17	10·89	66·74	58·99	56·78	58·83	61·30	53·38	63·66	July 5–9
,, 10–14	14·33	13·22	14·28	12·89	13·33	12·06	14·06	11·94	15·33	13·83	14·44	12·83	17·06	14·50	57·85	51·24	50·28	52·18	54·50	47·84	58·41	,, 10–14
,, 15–19	13·78	12·56	13·56	12·44	13·56	12·22	(13·00)	(12·44)	14·89	13·67	13·17	12·06	15·39	13·78	54·14	44·31	43·17	(47·28)	48·50	38·21	50·23	,, 15–19
,, 20–24	14·39	12·72	13·67	12·11	13·61	11·94	13·83	12·00	15·11	13·72	14·44	12·72	16·06	13·78	50·99	44·91	45·10	47·91	50·94	43·57	56·09	,, 20–24
,, 25–29	14·94	14·17	14·61	13·28	13·61	12·17	14·94	12·28	16·28	15·11	14·78	13·28	17·11	14·94	64·50	56·60	54·67	55·64	60·56	52·48	63·05	,, 25–29
Aug. 30–3	14·67	13·17	13·50	12·22	13·06	11·17	12·39	10·39	15·06	13·39	13·61	11·89	16·83	14·17	64·76	57·24	55·02*	56·02	59·24	51·80	61·58	Aug. 30–3
,, 4–8	15·56	14·50	14·78	13·78	14·06	12·39	12·61	11·61	16·00	14·72	15·67	13·50	17·11	14·72	50·25	47·91	49·89	53·89	50·25	45·96	56·88	,, 4–8
,, 9–13	14·67	12·67	13·94	12·56	13·89	12·50	13·50	12·67	15·17	13·61	14·72	13·06	15·89	13·83	59·39	54·62	54·40	57·59	55·18	49·47	58·58	,, 9–13
,, 14–18	16·00	15·11	16·00	15·00	14·17	13·06	12·89	11·89	16·78	15·89	16·39	14·83	17·83	15·44	56·50	53·02	(54·26)	58·15	54·37	49·54	59·29	,, 14–18
,, 19–23	14·44	12·89	12·94	12·00	10·72	9·56	10·28	9·00	15·94	14·78	13·89	12·83	17·67	15·22	55·48	49·06	49·16	52·89	51·37	44·41	55·51	,, 19–23
,, 24–28	14·06	12·94	12·89	11·67	11·89	10·50	10·67	9·83	15·50	14·61	13·28	12·06	15·78	14·22	54·97	50·99	51·45	54·82	52·01	46·75	57·36	,, 24–28
Sept. 29–2	12·39	10·50	10·50	9·17	10·44	8·83	9·78	8·00	13·67	11·83	11·33	9·72	13·56	11·39	59·78*	52·36	51·09	53·04	55·99	48·25	59·85	Sept. 29–2
,, 3–7	12·67	10·89	9·72	8·39	9·67	7·94	8·83	7·22	12·00	9·83	10·11	8·44	11·33	9·50	65·13†	59·39	58·48	60·61	58·78	53·83	62·09	,, 3–7
,, 8–12	14·28	12·61	11·83	10·50	11·28	9·56	10·72	9·28	14·00	13·00	12·11	10·39	14·11	12·06	53·68	51·11	52·94	57·01	52·18	49·52	59·14	,, 8–12
,, 13–17	13·33	11·94	(12·06)	(11·22)	12·06	10·50	11·83	10·11	14·28	12·94*	11·89	10·50	14·33	12·78	63·18	57·44	56·02	57·59	59·90	52·87	63·66	,, 13–17
,, 18–22	11·83	10·00	10·17	9·00	10·00	8·11	9·22	8·00	11·83	9·83	9·67	8·06	10·22	9·00	65·47	59·70	58·12	59·70	57·75	52·64	60·77	,, 18–22
,, 23–27	12·33	10·83	11·00	10·00	10·06	8·22	9·33	7·89	12·44	10·61	9·44	7·94	8·67	7·67	68·28	62·17	60·97	63·31	61·81	56·32	65·64	,, 23–27
Oct. 28–2	13·00	11·44	10·72	9·89	10·00	8·83	10·00	8·67	13·67	12·22	10·44	9·00	8·78	7·83	63·94	61·07	61·83	64·86	59·70	57·29	66·00	Oct. 28–2
,, 3–7	13·94	12·72	12·06	10·94	10·89	9·56	11·33	10·00	13·00	11·06	8·33	7·28	7·61	6·56	68·89	64·73	64·53	66·61	64·78	61·32	70·21	,, 3–7
,, 8–12	11·72	10·06	8·89	8·06	7·61	6·22	7·28	5·67	11·17	9·33	8·39	6·61	8·94	7·17	65·93	57·97	55·31	55·94	61·02	52·77	63·56	,, 8–12
,, 13–17	10·17	8·61	9·11	8·06	7·78	6·39	6·89	5·50	11·17	9·39	(8·94)	(6·94)	10·28	8·11	57·36	49·21	47·20	48·27	56·40	46·39	60·80	,, 13–17
,, 18–22	12·89	11·72	10·22	9·44	8·56	7·56	6·50	5·67	11·78	10·17	(8·50)	(7·83)	8·28	6·72	(56·40)	51·72	52·08	55·05	57·31	50·48	63·36	,, 18–22
,, 23–27	11·17	9·50	8·06	7·33	7·61	6·56	6·56	5·17	11·33	10·06	8·33	7·39	9·50	8·67	49·26	42·05	42·17	45·61	47·33	39·58	51·47	,, 23–27
Nov. 28–1	12·17	10·78	9·89	9·00	9·61	8·33	8·39	6·83	12·28	10·78	9·94	8·83	10·50	9·00	59·27	51·96	50·02	51·19	58·36	48·91	61·81	Nov. 28–1
,, 2–6	11·11	9·94	9·00	8·17	8·94	7·89	8·61	7·11	11·50	10·11	9·00	7·83	9·00	7·83	54·24	47·18	45·83	47·56	53·83	45·51	58·76	,, 2–6
,, 7–11	9·50	8·00	7·22	6·33	7·78	6·72	7·78	6·50	10·89	9·61	8·39	7·28	10·83	9·72	40·37	34·81	35·14	38·39	42·51	34·60	49·01	,, 7–11
,, 12–16	9·50	8·17	6·83	5·78	7·39	6·00	7·33	5·56	9·89	8·67	7·44	6·39	7·78	6·83	53·02	45·56	44·31	45·86	51·42	43·93	56·40	,, 12–16
,, 17–21	9·33	7·72	5·78	4·83	5·00	4·06	4·67	3·39	8·83	7·50	5·44	4·39	4·89	4·17	58·68	50·15	48·02	49·26	55·97	46·52	59·19	,, 17–21
,, 22–26	7·56	6·06	4·33	3·61	3·56	2·67	2·50	1·44	8·11	6·78	4·00	3·06	5·72	4·28	51·26	42·58	40·65	42·12	46·75	38·06	49·79	,, 22–26
Dec. 27–1	7·56	5·83	3·89	3·28	4·28	3·28	4·56	3·72	7·89	6·67	4·83	4·06	6·28	5·33	40·63	31·30	30·01	33·21	36·48	27·39	40·27	Dec. 27–1
,, 2–6	8·67	7·61	5·22	4·67	5·11	4·33	4·83	4·28	7·72	6·61	5·72	4·94	6·67	5·94	58·53	53·86	54·90	58·46	55·05	50·66	59·37	,, 2–6
,, 7–11	8·78	7·50	6·28	5·78	6·00	5·17	5·39	4·50	8·28	6·56	5·00	4·11	4·50	3·61	58·31	51·45	50·86	52·87	57·34	50·28	62·72	,, 7–11
,, 12–16	7·67	6·17	4·39	3·78	5·17	4·33	3·94	3·00	7·17	5·83	5·06	4·22	4·72	3·83	66·76	57·72	54·45	55·18	63·20	52·99	65·62	,, 12–16
,, 17–21	9·33	8·67	6·89	6·33	6·89	6·00	5·00	4·00	8·44	7·78	5·22	4·83	4·83	4·33	75·17	68·06	66·25	67·27	70·82	64·10	74·72	,, 17–21
,, 22–26	7·44	6·06	3·67	3·00	2·67	1·61	1·33	0·11	7·06	6·22	3·22	2·33	4·33	3·17	60·87	50·76	46·67	46·21	(55·36)	44·97	57·31	,, 22–26
,, 27–31	8·28	7·17	4·17	3·50	3·06	2·39	1·89	1·00	8·44	7·33	3·44	2·78	4·94	3·89	755·77	748·78	747·00	748·57	753·48	744·49	756·53	,, 27–31

NOTE.—Means which are enclosed in brackets are a little doubtful, one of the five daily means being approximate.

* Two of the five daily means are approximate.

† Three of the five daily means are approximate.

APPENDIX No. II.

ON THE DIURNAL RANGE OF RAINFALL AT THE SEVEN OBSERVATORIES IN CONNEXION WITH THE METEOROLOGICAL OFFICE: 1871–80.—BY ROBERT H. SCOTT, F.R.S.

The subject of the diurnal variation in precipitation has recently begun to attract attention, inasmuch as the gradual increase in the number of automatic rain gauges, of one pattern or another, has furnished materials for discussion to various investigators. In a paper *über den täglichen Gang des Regenfalles*, recently published by Professor F. Augustin, of Prague, in the *Sitzungsberichte der k. böhm. Gesellschaft der Wissenschaften* for 1882, will be found a discussion of 20 years records (1850–1869), at Prague, carried out to five terms of Bessel's series. To this are appended summaries of previously published results by various authors, for Prague (1850–59), Zechen (1857–71), Vienna (1853–56), and Modena (1879–80). To these should be added a short paper by Dr. Hann in the *Zeitschrift der oesterr. Gesellschaft für Meteorologie*, vol. XVII., p. 53, in which he gives the results for Coimbra (1876–83), and for Pawlowsk (1878–79).

Dr. Hann gives the following summary of the general outcome of the investigation as to the stations already enumerated:—

"We find everywhere an afternoon maximum between 2 and 4 p.m., and then a night maximum which falls between 4 and 6 a.m. at Coimbra and Modena; between 2 and 4 a.m. at Pawlowsk; and between midnight and 2 a.m. at Vienna. In addition, a third maximum appears at Coimbra and Modena between 10 p.m. and midnight, and one at Vienna between 8 and 10 a.m., which may also be considered as a delayed morning maximum (*vide* Coimbra and Modena). At Coimbra, Modena, and Vienna (as well as at Prague) three daily maxima are noticeable, but only two at Berne and Zechen.

"The daily range at Berne varies widely from that at all the other stations, for the afternoon maximum is absent, and is replaced by a strongly marked evening maximum between 10 and 11 p.m., the afternoon minimum appearing at all seasons of the year."

In this country the only extensive treatment of the subject has been that by Mr. James Glaisher, F.R.S., in the fourth volume of the Proceedings of the Meteorological Society, in which he discusses the records of the Osler's rain gauge at Greenwich, for the six years 1861–66, the instrument being situated 50 feet above the ground. After describing the results of our own records, I shall briefly compare Mr. Glaisher's figures with those for Kew; I shall not, however, reproduce his mean monthly figures, as the annual values show that the march of the phenomenon at the two observatories virtually agrees.

Beckley's self-recording rain gauges were supplied to all the observatories in the month of March 1871, and they have been in operation ever since. The records for the period up to December 31, 1880, have been submitted to discussion in order to learn what indications they would yield of a diurnal period in either the quantity or frequency of the fall.

The former of these was the more laborious of the two inquiries, and the monotonous task of adding up the hourly totals, month by month, for all the observatories, had been completed by Mr. Lovell Squire, who has been until recently Superintendent of the Observatory at Falmouth, when I undertook the inquiry. Mr. Squire has most kindly placed his figures at my disposal

The frequency figures, *i.e.*, the number of times in each month the rain has been recorded at each hour, have been calculatedspecially by me, with the assistance of Mr. C. H. Thompson, in the Office.

Automatic rain records are subject to two principal causes of derangement:—

Firstly. Snow or hail does not fall into the receiver in a liquid state, and therefore cannot be recorded by the pencil at the precise time of its fall. Usually during snow the amount accummulates until the gauge is visited in the morning to change the paper, and any determination of the hourly rate of fall is out of the question.

Secondly. Mechanical difficulties are experienced in keeping an instrument at work, which must necessarily be exposed to all weather, either from the clock stopping, or from the friction against the paper causing the pencil to stick, etc.

Fortunately we, in these islands, are less exposed to interruption from snow than most of our continental neighbours, but still the stoppages are frequent enough, as will be seen from the subjoined table, which shows the number of days lost in each month and each year at each observatory.

If the whole month is missing the name of the station is given in italics.

TABLE I.

—	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.
JANUARY -	*All* - - -	Falmouth - 2	Aberdeen - 1 Stonyhurst 3	Stonyhurst 4 Kew - - 5	Valencia - 1 Glasgow - 2 Aberdeen - 1 Falmouth - 1 Stonyhurst 1	Aberdeen - 3 Stonyhurst 5 Kew - - 1	*Armagh* - 10 Aberdeen - 2 Stonyhurst 1 Kew - - 1	Glasgow - 1 Aberdeen - 1	Armagh - 3 Glasgow - 6 *Aberdeen* - 9 Falmouth - 2 Stonyhurst 2 Kew - - 5	Aberdeen - 3 *Kew* - - 8
FEBRUARY -	*All* - - -	*Valencia* -	Glasgow - 5 Aberdeen - 6 Stonyhurst 2 Kew - - 6	Valencia - 1 Falmouth - 2	Aberdeen - 2 Stonyhurst 3 Kew - - 5	Glasgow - 1 Aberdeen - 5 Falmouth - 3 Stonyhurst 2 Kew - - 1	Armagh - 1 Aberdeen - 3 Stonyhurst 2 Kew - - 1		Armagh - 4 Glasgow - 6 *Aberdeen* - 8 Stonyhurst 5 Kew - - 3	Aberdeen - 1 Kew - - 3
MARCH - -	*All* - - -	*Valencia* - Aberdeen - 2 Stonyhurst 1	Valencia - 1 Aberdeen - 3 Stonyhurst 1	Aberdeen - 2 Stonyhurst 2 Kew - - 3	Stonyhurst 2 Kew - - 2	Valencia - 1 Aberdeen - 6 Stonyhurst 2 Kew - - 5	Aberdeen - 2 Falmouth - 5 Kew - - 1	Aberdeen - 1 Falmouth - 1 Stonyhurst 1 Kew - - 2	Glasgow - 4 Aberdeen - 4 Stonyhurst 2 Kew - - 3	Armagh - 1 Glasgow - 4 Falmouth - 1 Stonyhurst 1 *Kew* - - 7
APRIL - -	Armagh - 1	*Valencia* - Kew - - 1	Armagh - 1 Aberdeen - 3	Armagh - 1 Glasgow - 1	Valencia - 1 Glasgow - 1	Armagh - 1 Stonyhurst 2 Kew - - 1	Valencia - 1 Kew - - 1	Glasgow - 1		Valencia - 1 Kew - - 6
MAY - -	- - -	*Valencia* -	Glasgow - 1 Stonyhurst 1		Armagh - 2 Stonyhurst 1		*Glasgow* - 8	Stonyhurst 1 Kew - - 1	Valencia - 1 Kew - - 1	Armagh - 1 Kew - - 5
JUNE - -	Armagh - 2 Glasgow - 1 Stonyhurst 2	Glasgow - 1 Stonyhurst 1	Aberdeen - 1	Falmouth - 1	Glasgow - 2 Falmouth - 1	Falmouth - 2	Glasgow - 3 Falmouth - 1		Valencia - 1 Armagh - 1 Stonyhurst 1 Kew - - 2	Aberdeen - 1 Kew - - 3

Table I.—*continued.*

-----	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.
July	Glasgow - 1 Falmouth - 1 Kew - - 2	Glasgow - 1	*Glasgow* - 10	Aberdeen - 1 Falmouth - 1	Falmouth - 1 Stonyhurst 1	Valencia - 1 Armagh - 1 Falmouth - 1	Armagh - 1		Armagh - 1 Falmouth - 1	Valencia - 1 Stonyhurst 1 Kew - - 6
August	Glasgow - 1	Glasgow - 1		Valencia - 1	Valencia - 1 Armagh - 1 Stonyhurst 1	Valencia - 2 Falmouth 1	Stonyhurst 1	Armagh - 1	Aberdeen - 1 Stonyhurst 1 Kew - - 1	Kew - - 4
September	Valencia - 1 Armagh - 1 Stonyhurst 2	Armagh - 1 Falmouth - 3 Kew - - 1	Valencia - 1	Armagh - 2 Falmouth - 1	Valencia - 1 Falmouth - 2 Stonyhurst 1	Armagh - 1	Armagh - 1 Falmouth - 2	Falmouth - 2 Stonyhurst 4	Valencia - 1 Kew - - 1	Valencia - 1 Aberdeen - 1
October	Valencia - 1	Falmouth - 2	Glasgow - 1 Falmouth - 1 Stonyhurst 2	Glasgow - 1	Armagh - 1	Valencia - 1 Aberdeen - 1 Falmouth - 3			Armagh - 5 Kew - - 4	Aberdeen - 2 Falmouth - 1 Kew - - 4
November	Glasgow - 1 Aberdeen - 1	Stonyhurst 1	Valencia - - 1 Glasgow - 1	Valencia - 2 Glasgow - 2 Aberdeen - 2 Stonyhurst 4	Valencia - 1 Glasgow - 1 Stonyhurst 1	*Armagh* - 12 Glasgow - 2 Aberdeen - 3 Kew - - 1	Armagh - 1 Glasgow - 1 Kew - - 1	Armagh - 3 Aberdeen - 1 Stonyhurst 3	Armagh - 1 Aberdeen - 3 Kew - - 1	Valencia - 1 Armagh - 2 Glasgow - 5 Aberdeen - 5 Stonyhurst 1
December	Glasgow - 1 Aberdeen - 1 Stonyhurst - 6 Kew - - 1	Glasgow - 1 Aberdeen - 2 Falmouth - 1	Aberdeen - 1 Falmouth - 1	Armagh - 1 Glasgow - 4 *Aberdeen* - 12 Stonyhurst 6 Kew - - 4	Glasgow - 2 Aberdeen - 1 *Stonyhurst* 8 *Kew* - - 7	Valencia - 1 *Armagh* - Glasgow - 1 Aberdeen - 4 Kew - - 1	Armagh - 1 Glasgow - 1 Aberdeen - 2 Stonyhurst 2	Valencia - 2 *Armagh* - 9 Glasgow - 4 *Aberdeen* - 18 Falmouth - 3 *Stonyhurst* 8 *Kew* - - 8	Armagh - 2 Glasgow - 1 Aberdeen - 6 Falmouth - 1 Stonyhurst 3 Kew - - 5	Armagh - 4 Glasgow - 4 *Aberdeen* - 10 Stonyhurst 5 Kew - - 1

If at any observatory a portion of a day was lost, the entire day was ignored, for a record for an incomplete day would, of course, vitiate the curve for the month.

In calculating the Frequency, the entire month was ignored if seven days or upwards were missing, but in calculating the Quantity, this rule has not been followed by Mr. Squire, so that in this respect the two investigations are not precisely similar.

In some of the continental records to which reference has been made, the winter months have been entirely neglected, from the frequency of snow. This practice has not been followed on the present occasion, but it will be seen from the table that for several observatories only nine years are available for certain months, in some cases only eight, and in one instance, Aberdeen (December), only seven. The observatory that yields the most complete record is Falmouth, as no single month was lost from the first erection of the gauge. At Valencia none was lost owing to snow, but the gauge was out of order for four months in the spring of 1872.

One phenomenon appears in the tables, especially those of Frequency, and that is a maximum at 10 a.m., which at some observatories, and in several months, forms the most striking feature of the daily record. The explanation of this is to be found in imperfections of the mechanical operation of the gauge. Owing to friction of the pencil against the paper, slight quantities of moisture, arising either of mist or dew, may collect in the gauge and remain unnoticed on the recording paper. When the paper is changed, at 10 a.m., any slight displacement of the pencil from the horizontal line is set down to 10 o'clock, and so a number of entries of small quantities will produce a decided maximum of Frequency, and a less pronounced maximum of Quantity, at that hour.

The figures are given in Tables II. and III. They have been subjected to simple smoothing by the formula $B = \frac{a + 2b + c}{4}$, and they have been laid down graphically so as to form curves for each month and for the year. The seasonal means, December—February, March—May, June—August, September—November, have also been laid down.

The monthly curves for Valencia are given, for the other observatories only those for the seasons, and for the year have been reproduced.

It will be seen that at all the observatories the curves are, to a greater or less extent, irregular. This arises from the fact that exceptionally heavy thunder showers may entirely mask the true march of the phenomenon, and the period of ten years is too short to eliminate the disturbing influence of such falls. The idea of excluding them from the discussion seems unreasonable. Valencia is the station which suffers least from these disturbances.

The results for Quantity (Table II.) will now be described briefly.

TABLE II.

AVERAGE RAINFALL.—QUANTITY.

VALENCIA.

—	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January -	0·29	0·30	0·30	0·29	0·31	0·30	0·27	0·27	0·29	0·31	0·32	0·29	0·26	0·29	0·31	0·28	0·25	0·26	0·28	0·30	0·33	0·33	0·30	0·28
February -	·21	·22	·23	·22	·20	·18	·16	·15	·16	·18	·22	·25	·24	·22	·21	·21	·21	·19	·18	·19	·19	·17	·17	·19
March -	·12	·14	·14	·13	·12	·14	·16	·17	·17	·19	·19	·16	·15	·14	·15	·15	·13	·14	·15	·14	·13	·12	·11	·10
April -	·20	·21	·22	·22	·21	·20	·19	·18	·18	·19	·17	·15	·13	·12	·13	·13	·13	·15	·15	·16	·17	·18	·19	·20
May -	·13	·14	·14	·15	·16	·16	·16	·15	·13	·12	·11	·10	·10	·11	·10	·08	·10	·12	·12	·12	·12	·12	·13	·12
June -	·23	·22	·21	·24	·27	·26	·24	·24	·24	·21	·17	·12	·10	·09	·11	·14	·17	·19	·19	·19	·19	·17	·16	·20
July -	·19	·19	·22	·22	·22	·21	·20	·20	·21	·20	·15	·12	·12	·12	·14	·15	·17	·21	·20	·14	·12	·16	·19	·20
August -	·22	·25	·22	·20	·23	·28	·31	·26	·19	·18	·17	·14	·12	·12	·14	·16	·17	·19	·23	·26	·24	·22	·22	·20
September -	·18	·20	·20	·20	·20	·20	·20	·22	·25	·26	·23	·21	·21	·21	·22	·24	·23	·22	·21	·21	·22	·20	·20	·19
October -	·30	·28	·26	·24	·24	·25	·24	·23	·22	·22	·21	·21	·23	·24	·23	·23	·24	·24	·26	·28	·28	·28	·31	·32
November -	·23	·25	·22	·21	·21	·20	·19	·22	·26	·27	·27	·26	·23	·21	·22	·25	·23	·21	·21	·22	·21	·20	·20	·21
December -	·18	·18	·18	·21	·25	·25	·24	·26	·29	·29	·27	·26	·26	·25	·25	·23	·22	·22	·23	·23	·24	·23	·21	·19
Year -	·20	·20	·20	·20	·21	·21	·20	·20	·20	·21	·20	·18	·17	·17	·17	·18	·18	·19	·19	·19	·19	·19	·19	·19

SEASONS.

Dec. to Feb. -	·23	·23	·24	·24	·25	·24	·22	·23	·25	·26	·27	·27	·25	·25	·26	·24	·23	·22	·23	·24	·25	·24	·23	·22
Mar. ,, May -	·15	·16	·17	·17	·16	·17	·17	·17	·16	·17	·16	·14	·13	·12	·13	·12	·12	·14	·14	·14	·14	·14	·14	·14
June ,, Aug. -	·21	·22	·22	·22	·24	·25	·25	·23	·21	·20	·16	·13	·11	·11	·13	·15	·17	·20	·21	·20	·18	·18	·19	·20
Sept. ,, Nov. -	·24	·24	·23	·22	·22	·22	·21	·22	·24	·25	·24	·23	·22	·22	·22	·24	·23	·22	·23	·24	·24	·23	·24	·24

Table II.—Average Rainfall—QUANTITY—*continued.*

ARMAGH.

—	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January -	0·13	0·11	0·11	0·13	0·13	0·12	0·11	0·11	0·11	0·11	0·13	0·15	0·15	0·13	0·10	0·10	0·10	0·09	0·08	0·08	0·08	0·11	0·14	0·14
February -	·08	·08	·09	·10	·11	·11	·10	·07	·05	·07	·08	·07	·06	·08	·09	·10	·10	·10	·10	·11	·10	·10	·09	·08
March - -	·07	·06	·06	·08	·09	·08	·07	·06	·06	·09	·12	·11	·09	·09	·10	·10	·11	·09	·08	·09	·09	·09	·08	·08
April - -	·06	·07	·09	·11	·11	·10	·09	·09	·08	·08	·08	·07	·06	·07	·10	·12	·12	·12	·11	·10	·08	·07	·06	·05
May - -	·05	·06	·07	·10	·10	·09	·08	·09	·09	·07	·06	·07	·09	·10	·08	·07	·08	·08	·07	·06	·07	·07	·07	·06
June - -	·07	·07	·09	·10	·09	·08	·08	·09	·09	·10	·12	·14	·14	·14	·16	·16	·17	·17	·16	·14	·12	·09	·07	·07
July - -	·09	·11	·11	·11	·12	·13	·14	·13	·11	·12	·13	·15	·16	·17	·18	·19	·19	·17	·17	·20	·19	·14	·11	·09
August -	·14	·16	·18	·20	·19	·18	·20	·18	·16	·15	·15	·14	·15	·16	·17	·18	·19	·18	·16	·13	·12	·14	·14	·14
September -	·19	·17	·15	·15	·17	·19	·19	·19	·18	·15	·15	·16	·18	·18	·15	·14	·15	·15	·16	·18	·20	·20	·17	·18
October -	·16	·18	·21	·23	·23	·21	·19	·18	·18	·18	·17	·17	·19	·19	·17	·15	·15	·16	·16	·15	·15	·15	·15	·15
November -	·13	·13	·13	·11	·11	·11	·09	·08	·09	·10	·11	·12	·13	·14	·16	·16	·14	·13	·14	·16	·17	·18	·17	·14
December -	·12	·12	·12	·11	·11	·11	·10	·09	·11	·14	·14	·10	·10	·12	·13	·14	·16	·17	·17	·16	·14	·13	·11	·11
Year -	·09	·09	·10	·11	·11	·10	·10	·09	·09	·09	·11	·11	·11	·11	·12	·12	·13	·12	·12	·11	·10	·09	·09	·09

SEASONS.

Dec. to Feb. -	·11	·10	·11	·11	·12	·11	·10	·09	·09	·11	·12	·11	·10	·11	·11	·11	·12	·12	·12	·12	·11	·11	·11	·11
Mar. ,, May -	·06	·06	·07	·10	·10	·09	·08	·08	·08	·08	·09	·08	·08	·09	·09	·10	·10	·10	·09	·08	·08	·08	·07	·06
June ,, Aug. -	·10	·11	·13	·14	·13	·13	·14	·13	·12	·12	·13	·14	·15	·16	·17	·18	·18	·17	·16	·16	·14	·12	·11	·10
Sept. ,, Nov. -	·16	·16	·16	·16	·17	·17	·16	·15	·15	·14	·14	·15	·17	·17	·16	·15	·15	·15	·15	·16	·17	·18	·16	·16

Table II.—Average Rainfall.—QUANTITY—*continued.*

GLASGOW.

——	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January - -	0·16	0·17	0·18	0·18	0·17	0·17	0·17	0·16	0·14	0·14	0·14	0·13	0·14	0·16	0·17	0·17	0·17	0·17	0·16	0·17	0·17	0·16	0·15	0·15
February - -	·09	·10	·10	·11	·13	·13	·13	·13	·12	·11	·10	·08	·06	·07	·10	·11	·11	·10	·10	·09	·08	·07	·07	·08
March - -	·11	·11	·10	·11	·11	·11	·11	·11	·12	·13	·12	·10	·10	·10	·10	·10	·09	·08	·08	·08	·07	·07	·08	·09
April - -	·08	·08	·09	·10	·09	·08	·08	·08	·08	·08	·09	·09	·10	·09	·08	·07	·07	·08	·09	·10	·11	·11	·10	·09
May - -	·05	·05	·05	·04	·06	·07	·08	·08	·07	·07	·06	·07	·09	·10	·10	·10	·10	·10	·09	·08	·09	·10	·09	·07
June - -	·16	·14	·12	·11	·11	·11	·12	·10	·09	·09	·09	·09	·12	·15	·14	·13	·16	·20	·16	·12	·12	·14	·17	·18
July - -	·10	·13	·14	·15	·16	·17	·17	·15	·14	·13	·13	·13	·15	·17	·13	·11	·11	·11	·12	·12	·12	·11	·09	·08
August - -	·15	·16	·18	·20	·20	·19	·20	·18	·15	·14	·13	·12	·14	·16	·16	·16	·16	·17	·16	·13	·12	·13	·14	·14
September -	·19	·16	·15	·15	·17	·18	·18	·19	·18	·15	·13	·13	·15	·16	·13	·12	·14	·15	·16	·18	·20	·19	·17	·18
October - -	·16	·18	·21	·23	·22	·21	·19	·17	·17	·17	·17	·17	·19	·20	·18	·15	·14	·15	·16	·16	·16	·17	·16	·15
November -	·13	·13	·13	·11	·11	·11	·10	·09	·10	·11	·12	·12	·12	·13	·15	·15	·14	·13	·14	·16	·17	·17	·16	·14
December -	·12	·12	·12	·12	·13	·13	·11	·10	·12	·15	·14	·10	·10	·12	·13	·14	·16	·17	·17	·16	·14	·13	·11	·11
Year - -	·12	·12	·13	·13	·13	·13	·13	·13	·12	·12	·11	·11	·12	·13	·13	·12	·13	·13	·13	·12	·12	·13	·12	·12

SEASONS.

Dec. to Feb. -	·12	·13	·13	·14	·14	·14	·14	·13	·13	·13	·13	·10	·10	·12	·13	·14	·15	·15	·14	·14	·13	·12	·11	·11
Mar. ,, May -	·08	·08	·08	·08	·09	·09	·09	·09	·09	·09	·09	·09	·10	·10	·09	·09	·09	·09	·09	·09	·09	·09	·09	·08
June ,, Aug. -	·14	·14	·15	·15	·16	·16	·16	·14	·13	·12	·12	·11	·14	·16	·14	·13	·14	·16	·15	·12	·12	·13	·13	·13
Sept. ,, Nov. -	·16	·16	·16	·16	·17	·17	·16	·15	·15	·14	·14	·14	·15	·16	·15	·14	·14	·14	·15	·17	·18	·18	·16	·16

Table II.—Average Rainfall.—QUANTITY—*continued*.

ABERDEEN.

——	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January - -	0·05	0·04	0·05	0·06	0·07	0·07	0·08	0·10	0·10	0·10	0·10	0·09	0·09	0·08	0·06	0·05	0·05	0·06	0·06	0·06	0·06	0·07	0·07	0·07
February - -	·09	·10	·09	·08	·08	·09	·09	·08	·08	·11	·12	·10	·08	·08	·09	·10	·09	·08	·08	·08	·07	·07	·08	·08
March - -	·05	·06	·07	·09	·11	·11	·10	·09	·11	·14	·13	·08	·06	·06	·06	·07	·07	·08	·09	·08	·06	·06	·05	·05
April - -	·10	·09	·09	·10	·11	·13	·14	·15	·15	·13	·11	·09	·09	·10	·11	·11	·10	·09	·08	·07	·08	·09	·09	·10
May - -	·06	·06	·05	·05	·06	·07	·07	·07	·07	·06	·06	·07	·08	·07	·08	·10	·12	·15	·16	·12	·10	·11	·10	·08
June - -	·06	·07	·08	·09	·08	·07	·08	·10	·10	·09	·09	·09	·10	·12	·13	·13	·12	·12	·11	·10	·11	·11	·09	·07
July - -	·07	·08	·08	·09	·12	·12	·09	·07	·06	·06	·07	·09	·13	·17	·19	·20	·18	·15	·13	·10	·09	·10	·09	·07
August - -	·15	·16	·15	·16	·19	·18	·16	·17	·18	·16	·12	·08	·10	·14	·16	·17	·16	·14	·12	·15	·19	·19	·15	·14
September -	·12	·11	·12	·14	·16	·17	·19	·19	·17	·16	·14	·12	·12	·13	·11	·12	·14	·15	·14	·11	·11	·14	·17	·15
October - -	·09	·10	·12	·14	·17	·17	·17	·15	·12	·13	·14	·13	·12	·12	·11	·11	·11	·11	·10	·10	·10	·10	·09	·09
November -	·20	·19	·18	·19	·21	·21	·19	·17	·16	·14	·13	·13	·14	·14	·15	·14	·12	·13	·14	·13	·12	·14	·16	·18
December -	·08	·10	·11	·11	·09	·10	·11	·11	·11	·11	·10	·09	·09	·08	·07	·08	·11	·12	·11	·08	·08	·08	·08	·07
Year - -	·09	·09	·10	·11	·12	·12	·12	·12	·11	·11	·10	·09	·10	·11	·11	·11	·11	·11	·11	·10	·10	·10	·10	·09

SEASONS.

Dec. to Feb. -	·07	·08	·08	·08	·08	·09	·09	·10	·10	·11	·11	·09	·09	·08	·07	·08	·08	·09	·08	·07	·07	·07	·08	·07
Mar. ,, May -	·07	·07	·07	·08	·09	·10	·10	·10	·11	·11	·10	·08	·08	·08	·08	·09	·10	·11	·11	·09	·08	·09	·08	·08
June ,, Aug. -	·09	·10	·10	·11	·13	·12	·11	·11	·11	·10	·09	·09	·11	·14	·16	·17	·15	·14	·12	·12	·13	·13	·11	·09
Sept. ,, Nov. -	·14	·13	·14	·16	·18	·18	·18	·17	·15	·14	·14	·13	·13	·13	·12	·12	·12	·13	·13	·11	·11	·13	·14	·14

Table II.—Average Rainfall.—QUANTITY—*continued.*

FALMOUTH.

——	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January - -	0·27	0·28	0·28	0·29	0·28	0·26	0·24	0·26	0·27	0·26	0·24	0·25	0·28	0·29	0·29	0·28	0·27	0·25	0·23	0·21	0·22	0·24	0·24	0·25
February - -	·21	·20	·20	·20	·17	·16	·18	·18	·18	·16	·12	·10	·11	·16	·20	·22	·23	·22	·20	·19	·21	·23	·22	·21
March - -	·15	·14	·15	·17	·16	·14	·12	·12	·13	·14	·14	·11	·10	·10	·11	·10	·10	·12	·13	·13	·14	·15	·15	·15
April - -	·13	·14	·13	·14	·15	·18	·18	·19	·19	·16	·13	·12	·14	·15	·12	·10	·10	·12	·13	·12	·13	·15	·15	·14
May - -	·12	·11	·11	·12	·12	·12	·13	·13	·12	·10	·09	·09	·07	·05	·05	·07	·08	·09	·09	·09	·10	·11	·10	·11
June - -	·05	·05	·06	·09	·11	·12	·11	·09	·08	·08	·08	·08	·09	·09	·09	·09	·09	·11	·14	·16	·14	·14	·11	·06
July - -	·14	·15	·17	·17	·16	·16	·17	·16	·13	·12	·11	·10	·12	·14	·12	·11	·12	·12	·14	·16	·16	·14	·14	·14
August - -	·19	·16	·16	·16	·14	·14	·16	·16	·15	·16	·16	·14	·11	·12	·14	·14	·14	·15	·20	·22	·20	·19	·19	·19
September -	·23	·22	·22	·23	·24	·24	·25	·23	·23	·24	·21	·17	·16	·17	·16	·14	·12	·12	·14	·14	·12	·14	·19	·23
October - -	·24	·27	·29	·32	·34	·31	·29	·30	·27	·23	·22	·21	·19	·16	·14	·16	·20	·22	·21	·21	·24	·26	·24	·21
November -	·25	·26	·27	·31	·32	·26	·21	·21	·22	·23	·23	·23	·23	·23	·23	·24	·27	·29	·28	·24	·22	·20	·20	·22
December -	·28	·26	·24	·22	·22	·22	·21	·23	·24	·24	·25	·23	·21	·20	·21	·21	·20	·18	·17	·19	·22	·23	·25	·29
Year - -	·19	·19	·19	·20	·20	·19	·19	·19	·18	·18	·16	·15	·14	·15	·16	·15	·15	·16	·16	·16	·17	·17	·18	·18

SEASONS.

Dec. to Feb. -	·25	·25	·24	·24	·22	·21	·21	·22	·23	·22	·20	·19	·20	·22	·23	·24	·23	·22	·20	·20	·22	·23	·24	·25
Mar. „ May -	·13	·13	·13	·15	·14	·15	·14	·15	·15	·13	·12	·11	·10	·10	·09	·09	.09	·11	·12	·11	·12	·14	·13	·13
June „ Aug. -	·13	·12	·13	·14	·14	·14	·15	·14	·12	·12	·12	·11	·11	·12	·12	·11	·12	·13	·16	·18	·17	·16	·15	·13
Sept. „ Nov. -	·24	·25	·26	·29	·30	·27	·25	·25	·24	·23	·22	·20	·19	·19	·18	·18	·20	·21	·21	·20	·19	·20	·21	·22

Table II.—Average Rainfall.—QUANTITY—*continued.*

STONYHURST.

——	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January - -	0·17	0·14	0·13	0·16	0·19	0·20	0·19	0·17	0·16	0·16	0·16	0·14	0·14	0·17	0·17	0·15	0·14	0·15	0·18	0·18	0·16	0·14	0·14	0·17
February - -	·11	·12	·13	·12	·13	·13	·11	·11	·11	·12	·12	·11	·12	·12	·12	·13	·13	·12	·10	·11	·12	·13	·14	·12
March - -	·15	·14	·13	·14	·16	·15	·14	·12	·11	·11	·12	·11	·10	·09	·08	·09	·11	·11	·12	·15	·19	·21	·20	·17
April - -	·06	·07	·08	·09	·09	·09	·09	·10	·10	·10	·10	·09	·08	·08	·09	·10	·11	·11	·12	·11	·08	·07	·06	·06
May - -	·08	·09	·09	·09	·10	·12	·14	·15	·15	·13	·13	·13	·11	·12	·13	·13	·11	·09	·08	·06	·05	·05	·06	·07
June - -	·10	·10	·10	·10	·12	·11	·10	·11	·13	·13	·13	·13	·14	·16	·17	·20	·23	·22	·20	·19	·19	·18	·14	·11
July - -	·16	·17	·21	·24	·22	·21	·23	·25	·21	·17	·17	·18	·20	·20	·21	·23	·25	·27	·26	·21	·19	·19	·17	·16
August - -	·21	·26	·23	·19	·21	·24	·26	·27	·26	·25	·24	·21	·18	·18	·20	·21	·23	·23	·20	·18	·17	·16	·15	·16
September -	·21	·22	·23	·24	·24	·25	·27	·16	·24	·22	·18	·15	·14	·12	·12	·12	·16	·21	·23	·22	·21	·22	·20	·19
October - -	·20	·26	·28	·27	·25	·21	·17	·16	·16	·19	·20	·20	·21	·21	·22	·22	·21	·20	·22	·23	·21	·20	·21	·19
November -	·19	·19	·19	·19	·20	·18	·15	·12	·12	·12	·13	·14	·14	·14	·15	·16	·16	·18	·19	·19	·18	·18	·18	·18
December -	·17	·17	·17	·17	·18	·19	·17	·13	·12	·14	·16	·15	·13	·12	·13	·14	·14	·16	·19	·17	·14	·13	·15	·17
Year - -	·15	·16	·16	·16	·17	·17	·16	·16	·15	·15	·15	·14	·14	·14	·15	·15	·16	·16	·17	·16	·15	·15	·14	·14

SEASONS.

Dec. to Feb. -	·15	·14	·14	·15	·17	·17	·16	·14	·13	·14	·15	·13	·13	·14	·14	·14	·14	·14	·16	·15	·14	·13	·14	·15
Mar. „ May -	·10	·10	·10	·11	·12	·12	·12	·12	·12	·11	·12	·11	·10	·10	·10	·11	·11	·10	·11	·11	·11	·11	·11	·10
June „ Aug. -	·16	·18	·18	·18	·18	·19	·20	·21	·20	·18	·18	·17	·17	·18	·19	·21	·24	·24	·22	·19	·18	·18	·15	·14
Sept. „ Nov. -	·20	·22	·23	·23	·23	·21	·20	·18	·17	·18	·17	·16	·16	·16	·16	·17	·18	·20	·21	·21	·20	·20	·20	·19

Table II.—Average Rainfall.—QUANTITY—*continued*.

KEW.

——	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January -	0·07	0·06	0·06	0·07	0·08	0·08	0·09	0·11	0·11	0·10	0·10	0·09	0·09	0·09	0·09	0·09	0·10	0·11	0·10	0·09	0·07	0·06	0·06	0·07
February -	·07	·08	·07	·06	·06	·05	·05	·04	·05	·06	·07	·06	·05	·06	·06	·05	·05	·05	·05	·05	·06	·05	·05	·06
March - -	·05	·05	·04	·03	·03	·04	·05	·05	·05	·05	·05	·04	·05	·07	·08	·07	·05	·05	·05	·04	·03	·03	·04	·04
April - -	·09	·09	·08	·06	·07	·08	·09	·09	·10	·09	·08	·08	·09	·11	·09	·08	·09	·10	·09	·07	·07	·06	·07	·08
May - -	·07	·07	·09	·09	·08	·07	·06	·05	·05	·06	·06	·06	·06	·08	·10	·11	·12	·12	·09	·06	·06	·06	·07	·08
June - -	·07	·07	·07	·09	·10	·11	·10	·08	·08	·07	·07	·08	·08	·08	·09	·11	·11	·13	·16	·16	·15	·15	·13	·08
July - -	·09	·08	·07	·07	·07	·09	·11	·11	·09	·10	·12	·14	·18	·22	·20	·15	·11	·11	·14	·11	·09	·10	·11	·10
August - -	·09	·12	·14	·11	·08	·09	·07	·06	·07	·07	·08	·11	·14	·15	·14	·10	·09	·10	·09	·07	·07	·09	·11	·10
September -	·13	·12	·12	·14	·14	·10	·07	·05	·04	·07	·09	·09	·09	·09	·07	·05	·09	·13	·12	·10	·11	·12	·12	·13
October -	·09	·11	·12	·12	·12	·11	·11	·10	·11	·14	·15	·16	·17	·17	·15	·14	·13	·11	·11	·12	·10	·07	·06	·07
November -	·10	·10	·09	·10	·10	·10	·09	·08	·07	·06	·07	·06	·06	·08	·10	·11	·12	·13	·11	·09	·09	·09	·09	·10
December -	·06	·07	·08	·07	·07	·07	·07	·07	·06	·06	·06	·06	·07	·08	·08	·10	·09	·07	·07	·07	·07	·07	·06	·06
Kew—Year -	·08	·08	·08	·08	·08	·08	·08	·07	·07	·08	·08	·09	·09	·10	·10	·09	·10	·10	·09	·08	·08	·08	·08	·08
Greenwich—Year	·05	·05	·05	·06	·06	·06	·06	·06	·05	·05	·04	·04	·04	·05	·05	·06	·07	·06	·05	·04	·04	·04	·05	·05

SEASONS.

Dec. to Feb. -	·07	·07	·07	·07	·07	·07	·07	·07	·07	·07	·08	·07	·07	·08	·08	·08	·08	·08	·07	·07	·07	·06	·06	·06
Mar. „ May -	·07	·07	·07	·06	·06	·06	·07	·06	·07	·07	·06	·06	·07	·09	·09	·09	·09	·09	·08	·06	·05	·05	·06	·07
June „ Aug. -	·08	·09	·09	·09	·08	·10	·09	·08	·08	·08	·09	·11	·13	·15	·14	·12	·10	·11	·13	·11	·10	·11	·12	·09
Sept. „ Nov. -	·11	·11	·11	·12	·12	·10	·09	·08	·07	·09	·10	·10	·11	·11	·11	·10	·11	·12	·11	·10	·10	·09	·09	·10

Valencia.—The curves at this observatory are the most interesting and regular of any. They exhibit in the summer months (April–August) a maximum in the morning, a strongly marked minimum at about 3h. p.m. with a secondary maximum at about 6h. p.m. The same features come out, to some extent, in the annual curve, in which the principal maximum falls in the morning at 4h.—5h. a.m., and again at 9h. a.m. In the winter months, however, (December and January) the afternoon maximum is thrown forward to 8h. p.m.

Armagh.—These curves have no striking peculiarities, but the morning maximum has disappeared. In the summer the afternoon minimum is apparently absent, and in several of the months the principal maximum falls at that period of the day. The annual curve shows some minor oscillations, but the period of maximum is in the early afternoon.

Glasgow.—Here we have no decided range on the mean of the year, and in June and July the course of the monthly curves is entirely masked by exceptional showers in the afternoon.

Aberdeen.—These curves, in several of the months, show a decided decrease of the amount in the evening, with a minimum at about 7h. or 8h. p.m. In July and August the curve rises very rapidly between 11h. a.m. and 2h. p.m., but this feature does not appear in other months, except to a slight extent in June. The annual curve resembles that for Glasgow, in being nearly a straight line.

Falmouth.—We find here no very great discordance between the different months, and as compared with Valencia, this observatory shows, in summer, an agreement in the fact of a maximum being noticeable at 6h. p.m. In the winter months a minimum occurs at the same hour. The annual curve rises very gradually from noon to 3h. a.m., at which hour it reaches its highest point. In this feature Falmouth agrees with Valencia.

Stonyhurst.—No remark is called for. The afternoon maximum reappears, to a marked extent in some of the months, and decidedly in the curve for the year.

Kew.—These curves are more irregular than those of any other station, owing to exceptional falls of rain. It will be seen that on the mean of the year the early morning maximum is absent. A secondary minimum appears at 3h. p.m., the curve reaching its highest points about 1h. and 4h. p.m. The variations from a straight line are, however, slight.

The figures for Greenwich, which are given in the table, are uniformly below those for Kew, the two curves approaching each other most closely at 7h. a.m., when the difference is only 0·01 in. and being widest apart at 1h. p.m., when it is 0·05 in. Accordingly, though the annual curves resemble each other, relatively more rain falls between 4h. and 9h. a.m., and less between noon and 2h. p.m. at Greenwich than at Kew. The difference between the values for the two observatories is partly to be accounted for by the fact that the average annual rainfall at Greenwich for the years 1861–66 was 23·77 ins., while at Kew for the years 1871–80 the average amount was 25·97 ins.

The most striking fact that appears from the consideration of the entire seven curves is that at the stations on the South and West Coasts, which are exposed to the influence of the Atlantic Ocean, Valencia and Falmouth, the maximum occurs during the morning hours, with a minimum about mid-day, while at Kew, the most continental station, the maximum falls in the early afternoon.

We now come to the second series of figures, those for Frequency of Fall (Table III.), and here the course of the curves is more regular than that of those which have just been described, inasmuch as the exceptional rate of fall during thunderstorms has comparatively no influence.

TABLE III.

AVERAGE RAINFALL.—FREQUENCY.

VALENCIA.

—	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January - -	9·3	9·8	10·5	11·3	12·0	12·3	11·8	11·2	11·2	11·4	10·5	8·5	7·4	7·8	8·4	8·7	8·7	8·7	9·2	9·7	9·8	9·9	9·7	9·3
February - -	9·2	9·2	9·4	10·2	11·0	11·3	10·6	9·9	9·8	9·6	8·8	8·0	7·5	7·2	7·1	7·6	7·9	7·9	8·2	8·8	8·6	7·9	8·2	8·9
March - -	6·8	7·6	8·1	8·2	8·4	9·2	9·5	9·0	8·4	7·6	6·7	5·7	5·3	5·5	5·9	6·2	5·8	5·3	5·5	5·9	6·3	6·5	6·5	6·4
April - -	6·8	7·5	8·0	8·3	8·5	8·3	8·1	8·0	7·4	6·9	6·4	5·4	4·4	4·3	4·5	4·5	4·8	5·2	5·4	5·9	6·5	6·4	6·1	6·4
May - -	4·9	5·7	6·3	7·1	7·7	7·9	7·6	6·8	6·2	5·8	4·8	3·3	3·1	3·6	3·8	3·5	3·5	3·7	3·8	4·0	4·5	4·8	4·6	4·4
June - -	7·6	8·7	9·1	9·4	9·7	9·7	9·4	8·6	7·6	6·9	5·7	4·0	3·1	3·0	3·2	3·4	3·6	3·9	4·1	4·5	5·0	5·3	5·6	6·4
July - -	7·1	7·7	8·3	8·7	8·3	7·6	7·0	6·7	6·9	6·4	5·1	4·2	4·3	4·9	4·9	4·7	4·8	5·1	5·1	4·9	5·2	5·8	6·3	6·7
August - -	6·1	7·0	7·7	8·1	8·6	9·7	10·1	9·2	8·0	7·1	5·5	4·1	4·0	4·3	4·3	4·2	4·6	5·2	5·5	5·8	5·9	6·0	6·1	5·9
September -	7·0	7·5	7·7	7·6	8·3	8·7	8·3	8·2	8·5	8·3	6·9	5·6	5·1	4·8	4·9	5·1	5·2	5·6	6·4	6·8	6·6	6·5	6·6	6·7
October - -	9·0	9·7	10·2	10·7	11·4	11·4	10·7	10·0	9·3	8·8	7·8	6·4	6·0	6·1	6·1	6·1	6·8	7·4	7·4	7·4	7·6	7·7	8·3	8·7
November -	7·8	7·5	7·3	8·2	9·5	9·9	9·7	9·6	9·6	9·3	8·4	6·8	5·8	6·3	6·8	6·8	6·9	7·0	7·4	7·9	7·8	7·4	7·3	7·5
December -	8·7	8·7	9·0	9·8	10·8	11·4	11·7	11·7	11·5	10·9	9·8	8·5	7·6	7·5	7·8	7·9	7·9	8·1	8·3	8·5	8·5	8·3	8·4	8·6
Year - -	7·5	8·0	8·5	9·0	9·6	9·8	9·5	9·0	8·6	8·2	7·2	5·9	5·3	5·5	5·6	5·7	5·9	6·1	6·4	6·7	6·8	6·9	7·0	7·2

SEASONS.

Dec. to Feb. -	9·1	9·2	9·6	10·4	11·3	11·7	11·4	10·9	10·8	10·6	9·7	8·3	7·5	7·5	7·8	8·1	8·2	8·2	8·6	9·0	9·0	8·7	8·8	8·9
Mar. ,, May -	6·2	6·9	7·5	7·9	8·2	8·5	8·4	7·9	7·3	6·8	6·0	4·8	4·3	4·5	4·7	4·7	4·7	4·7	4·9	5·3	5·8	5·9	5·7	5·7
June ,, Aug. -	6·9	7·8	8·4	8·7	8·9	9·0	8·8	8·2	7·5	6·8	5·4	4·1	3·8	4·1	4·1	4·1	4·3	4·7	4·9	5·1	5·4	5·7	6·0	6·3
Sept. ,, May -	7·9	8·2	8·4	8·8	9·7	10·0	9·6	9·3	9·1	8·8	7·7	6·3	5·6	5·7	5·9	6·0	6·3	6·7	7·1	7·4	7·3	7·2	7·4	7·6

Table III.—Average Rainfall.—FREQUENCY—*continued.*

ARMAGH.

——	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January - -	3·9	4·1	4·1	4·1	4·0	3·5	3·4	3·7	3·4	3·3	3·9	4·0	3·9	4·0	4·0	4·0	3·8	3·3	2·9	3·0	3·5	4·1	4·3	4·0
February - -	2·8	2·9	3·2	3·4	3·2	3·0	2·9	2·6	2·4	2·9	3·3	2·6	2·3	2·9	3·5	3·7	3·5	3·3	3·1	3·3	3·1	3·3	3·4	3·3
March - -	3·2	3·0	3·0	3·0	3·0	2·9	2·7	2·6	3·0	4·3	4·8	3·5	2·9	3·3	3·5	3·6	3·7	3·8	3·8	3·8	3·6	3·5	3·4	3·4
April - -	2·4	2·8	3·1	3·2	3·3	3·0	2·7	3·0	3·2	3·2	3·2	2·9	2·9	3·0	3·1	3·5	3·7	3·6	3·4	3·1	2·8	2·4	2·2	2·2
May - -	2·0	2·3	2·8	3·3	3·6	3·5	3·4	3·3	3·0	2·6	2·6	2·6	2·8	3·2	3·3	3·4	3·6	3·2	2·9	2·9	2·7	2·5	2·2	2·0
June - -	3·0	3·2	3·4	3·3	3·3	3·3	3·1	2·9	2·9	3·3	3·7	3·5	4·0	4·7	4·7	4·6	4·4	4·5	4·7	4·6	4·1	3·6	3·1	2·9
July - -	2·8	3·0	3·1	3·4	3·7	3·8	3·6	3·3	3·0	3·4	4·1	3·9	3·7	3·9	4·5	5·1	5·2	4·9	4·7	4·6	4·6	4·3	3·3	2·7
August - -	3·2	3·3	3·3	3·2	3·0	3·0	3·3	3·3	3·0	3·1	3·7	3·8	4·0	4·5	4·5	4·0	3·5	3·4	3·6	3·4	3·2	3·2	3·1	3·0
September -	3·5	3·5	3·5	3·7	4·0	4·0	3·7	3·2	3·0	3·2	3·6	3·6	3·8	4·1	4·1	4·5	5·0	4·7	4·1	3·8	3·6	3·5	3·4	3·4
October - -	4·2	4·6	4·9	5·1	4·9	4·8	4·9	4·9	4·9	5·0	4·8	3·9	3·4	3·7	4·0	4·1	4·5	4·7	4·5	4·3	3·8	3·2	3·2	3·6
November -	3·2	2·8	2·8	2·9	2·9	3·0	3·1	3·3	3·3	3·7	4·3	3·9	3·0	3·1	3·9	4·3	4·2	4·1	4·4	4·5	4·3	3·9	3·7	3·6
December -	4·0	3·8	3·3	3·0	2·8	2·8	3·0	3·2	3·2	3·3	3·7	3·4	3·3	3·4	3·3	3·3	3·4	3·4	3·4	3·5	3·7	3·5	3·2	3·6
Year - -	3·2	3·3	3·4	3·5	3·5	3·4	3·3	3·3	3·2	3·4	3·8	3·4	3·3	3·7	3·9	4·0	4·0	3·8	3·8	3·7	3·6	3·4	3·2	3·1

SEASONS.

Dec. to Feb. -	3·6	3·6	3·5	3·5	3·3	3·1	3·1	3·2	3·0	3·2	3·6	3·3	3·2	3·4	3·6	3·7	3·6	3·3	3·1	3·2	3·4	3·6	3·7	3·6
Mar. „ May -	2·5	2·7	3·0	3·2	3·3	3·1	2·9	3·0	3·1	3·4	3·5	3·0	2·9	3·2	3·3	3·5	3·7	3·5	3·4	3·3	3·0	2·8	2·6	2·5
June „ Aug. -	3·0	3·2	3·3	3·3	3·3	3·4	3·3	3·2	3·0	3·3	3·8	3·7	3·9	4·4	4·6	4·6	4·4	4·3	4·3	4·	4·0	3·7	3·2	2·9
Sept. „ Nov. -	3·6	3·6	3·7	3·9	3·9	3·9	3·9	3·8	3·7	4·0	4·2	3·8	3·4	3·6	4·0	4·3	4·6	4·5	4·3	4·2	3·9	3·5	3·4	3·5

Table III.—Average Rainfall.—Frequency—*continued.*

GLASGOW.

—	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January - -	6·6	6·9	6·8	7·0	7·2	7·1	6·8	6·6	6·6	7·1	6·8	5·1	4·3	4·6	4·9	5·5	6·1	6·5	6·6	6·4	6·1	5·7	5·6	6·0
February - -	4·6	5·3	5·5	5·8	6·3	6·4	6·2	5·7	5·6	5·8	4·9	2·9	2·2	2·8	3·6	4·1	4·0	4·0	4·1	4·4	4·5	4·2	3·6	3·6
March - -	5·3	6·1	6·7	6·8	6·5	6·2	6·0	5·8	5·7	5·6	5·0	3·7	3·5	4·0	4·3	4·8	4·9	4·7	4·8	5·0	4·8	4·5	4·5	4·7
April - -	3·8	4·2	4·7	5·0	5·1	5·0	4·7	4·2	3·9	3·8	3·4	2·8	2·7	2·8	3·0	3·3	3·5	3·5	3·4	3·5	3·8	4·0	3·9	3·7
May - -	3·2	3·4	3·5	3·2	3·6	4·5	4·9	4·5	4·4	4·5	3·9	2·9	2·7	3·2	3·6	3·7	3·5	3·1	2·9	2·9	3·2	3·4	3·5	3·4
June - -	5·5	5·3	5·1	4·8	4·6	4·8	5·2	4·8	3·9	3·5	3·2	2·9	3·4	4·0	4·0	4·0	4·2	4·6	4·6	4·3	4·1	4·0	4·3	5·1
July - -	4·5	4·9	5·2	5·4	5·3	4·8	4·3	4·1	4·2	4·5	4·6	4·1	3·9	4·1	4·1	3·8	3·7	3·7	3·8	3·9	3·9	4·0	3·7	3·8
August - -	4·2	4·2	4·7	5·4	5·8	5·5	5·2	4·8	4·7	5·0	4·6	3·7	3·6	4·1	4·2	4·3	4·5	4·5	4·6	4·4	3·5	3·4	3·9	4·1
September -	5·3	5·7	6·0	6·0	5·9	6·0	5·6	5·1	4·8	4·7	4·5	4·0	4·1	4·3	4·4	5·0	5·3	5·1	5·3	5·4	5·3	5·1	4·7	4·7
October - -	6·6	7·5	7·9	7·9	7·6	7·3	7·2	6·8	6·3	6·2	5·8	4·6	4·2	4·8	5·2	5·4	5·4	5·6	5·7	5·5	5·4	5·2	5·1	5·5
November -	5·4	5·4	5·2	5·0	5·2	5·6	5·3	4·7	4·6	4·9	4·6	3·8	3·9	4·4	4·7	4·8	4·7	4·6	4·8	4·8	4·7	4·8	5·0	5·2
December -	5·9	5·9	5·8	5·5	5·5	5·7	5·6	5·4	5·1	5·3	5·1	4·1	4·0	4·9	5·5	5·7	5·7	5·3	5·4	5·7	5·7	5·5	5·2	5·4
Year - -	5·1	5·4	5·6	5·7	5·7	5·8	5·7	5·3	5·0	5·1	4·7	3·8	3·6	4·0	4·2	4·5	4·6	4·6	4·6	4·7	4·6	4·5	4·4	4·6

Seasons.

Dec. to Feb. -	5·7	6·0	6·0	6·1	6·3	6·4	6·2	5·9	5·8	6·1	5·6	4·0	3·5	4·1	4·7	5·1	5·3	5·3	5·4	5·5	5·4	5·1	4·8	5·0
Mar. „ May -	4·1	4·6	5·0	5·0	5·1	5·2	5·2	4·8	4·7	4·6	4·1	3·1	3·0	3·3	3·6	3·9	4·0	3·8	3·7	3·8	3·9	4·0	4·0	3·9
June „ Aug. -	4·7	4·8	5·0	5·2	5·2	5·0	4·9	4·6	4·3	4·3	4·1	3·6	3·6	4·1	4·1	4·0	4·1	4·3	4·3	4·2	3·8	3·8	4·0	4·3
Sept. „ Nov. -	5·8	6·2	6·4	6·3	6·2	6·3	6·0	5·5	5·2	5·3	5·0	4·1	4·1	4·5	4·8	5·1	5·1	5·1	5·3	5·2	5·1	5·0	4·9	5·1

Table III.—Average Rainfall.—FREQUENCY—*continued.*

ABERDEEN.

—		M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January -	-	2·9	2·7	2·6	2·8	3·4	3·9	4·1	4·1	4·2	4·2	4·1	3·7	3·5	3·4	3·0	2·9	3·2	3·1	2·6	2·4	2·7	3·1	3·3	3·1
February -	-	3·8	3·9	3·8	3·7	3·8	3·9	3·8	3·6	3·7	4·3	4·6	3·9	3·5	3·5	3·7	4·1	4·0	3·8	3·9	3·8	3·3	3·0	3·1	3·4
March -	-	2·9	3·4	3·5	3·2	3·2	3·4	3·4	3·2	3·5	4·8	4·9	3·2	2·5	2·9	3·2	3·3	3·2	3·6	4·0	3·5	3·0	2·8	2·6	2·6
April -	-	3·9	3·9	4·0	4·5	5·0	5·0	4·8	4·8	4·8	4·3	3·8	3·4	3·2	3·3	3·5	3·5	3·2	3·3	3·5	3·4	3·2	3·2	3·4	3·7
May -	-	2·7	2·5	2·3	2·4	2·8	3·0	3·2	3·3	3·1	3·1	2·9	2·7	2·8	2·9	2·8	2·9	3·5	4·2	4·3	3·9	3·3	2·8	2·8	2·7
June -	-	2·7	2·7	2·6	2·5	2·5	2·8	3·1	3·1	3·0	2·8	2·6	2·8	3·2	3·5	3·5	3·4	3·2	3·4	3·4	3·2	3·2	3·3	3·1	2·9
July -	-	2·9	3·2	3·1	3·0	3·2	3·5	3·3	2·9	2·5	2·4	2·4	2·7	3·5	4·5	4·9	4·8	4·4	4·1	3·9	3·7	3·6	3·6	3·5	3·0
August -	-	3·9	3·8	4·0	4·0	3·9	4·0	3·9	3·9	3·9	3·9	3·8	3·4	3·4	3·9	4·3	4·5	4·7	4·6	4·0	3·5	3·4	3·8	4·1	4·1
September	-	3·5	3·4	3·7	4·1	4·5	4·7	4·9	4·9	4·4	4·1	4·0	3·7	3·6	3·6	3·5	3·8	3·9	3·7	3·9	4·3	4·1	4·0	4·1	3·8
October -	-	4·5	4·5	4·5	4·6	5·0	5·7	5·9	5·6	5·3	5·6	5·4	4·1	3·7	4·1	4·2	4·4	4·5	4·4	4·4	4·5	4·6	4·6	4·3	4·4
November	-	5·8	5·5	5·8	6·2	6·4	6·4	6·1	5·8	5·7	5·6	5·3	5·1	5·3	5·2	5·1	5·0	4·6	4·9	5·5	5·5	5·8	6·2	6·1	6·1
December	-	3·6	3·8	3·8	3·8	4·0	4·5	4·7	4·6	4·8	5·1	5·1	4·7	4·3	4·1	3·8	3·6	3·9	4·4	4·4	4·1	4·0	3·9	3·4	3·2
Year -	-	3·6	3·6	3·6	3·7	4·0	4·2	4·3	4·1	4·1	4·2	4·1	3·6	3·6	3·7	3·8	3·8	3·9	3·9	4·0	3·8	3·7	3·7	3·7	3·5

SEASONS.

Dec. to Feb.	-	3·4	3·5	3·4	3·4	3·7	4·1	4·2	4·1	4·2	4·5	4·6	4·1	3·8	3·7	3·5	3·5	3·7	3·8	3·6	3·4	3·3	3·3	3·3	3·2
Mar. „ May	-	3·2	3·3	3·3	3·4	3·7	3·8	3·8	3·8	3·8	4·1	3·9	3·1	2·8	3·0	3·2	3·2	3·3	3·7	3·9	3·6	3·2	2·9	2·9	3·0
June „ Aug.	-	3·2	3·2	3·2	3·2	3·2	3·4	3·4	3·3	3·1	3·0	2·9	3·0	3·4	4·0	4·2	4·2	4·1	4·0	3·8	3·5	3·4	3·6	3·6	3·3
Sept. „ Nov.	-	4·6	4·5	4·7	5·0	5·3	5·	5·6	5·4	5·1	5·1	4·9	4·3	4·2	4·3	4·3	4·4	4·3	4·3	4·6	4·8	4·8	4·9	4·8	4·8

Table III.—Average Rainfall.—FREQUENCY—*continued*.

FALMOUTH.

—		M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January	-	8·0	7·8	7·8	7·8	7·5	7·4	7·7	7·6	7·6	7·7	7·4	7·1	7·3	7·6	7·6	7·9	8·2	8·0	7·6	7·3	7·4	7·4	7·6	8·0
February	-	6·9	6·4	6·3	6·5	6·6	6·2	5·8	6·3	6·6	5·9	5·2	5·1	5·5	6·2	6·8	6·9	6·9	6·7	6·0	5·8	6·3	6·8	6·8	6·9
March -	-	6·0	5·5	5·2	5·5	5·9	5·8	5·3	4·9	4·8	4·7	4·4	4·2	4·1	4·1	4·5	4·8	4·9	4·7	4·4	4·7	5·4	5·5	5·2	5·7
April -	-	6·1	5·8	5·5	5·8	6·0	5·9	5·4	5·4	5·4	5·1	4·7	4·5	4·8	4·7	4·3	4·2	4·5	4·7	4·6	4·6	4·8	5·1	5·3	5·7
May -	-	3·9	3·7	3·5	3·8	3·8	3·5	3·4	3·4	3·4	3·2	3·0	2·8	2·7	2·5	2·3	2·4	2·6	2·7	2·8	2·9	3·1	3·0	2·9	3·4
June -	-	3·5	4·1	4·8	5·2	5·1	5·3	5·4	4·9	4·2	4·0	3·7	2·9	2·7	2·9	2·8	2·9	3·4	3·3	3·0	2·8	2·8	2·7	2·5	2·9
July -	-	5·0	5·1	4·9	5·0	5·0	4·7	4·4	4·2	3·9	3·7	3·8	3·6	3·5	3·6	3·5	3·3	3·4	3·8	4·0	4·0	4·1	4·1	4·0	4·3
August -	-	5·2	5·3	5·2	5·2	5·1	5·1	5·1	5·1	4·8	4·7	4·3	3·4	3·3	3·4	3·4	3·7	3·9	3·9	4·1	4·3	4·5	4·1	3·6	4·2
September	-	5·9	6·2	6·6	6·9	6·5	6·0	6·0	6·2	6·0	5·9	5·7	4·4	3·9	4·1	3·9	3·8	3·7	3·7	3·8	3·8	3·8	4·2	4·6	5·2
October	-	7·1	8·0	8·7	9·1	8·9	8·2	7·8	7·9	7·8	7·4	6·6	5·5	4·8	4·8	5·0	5·3	5·7	6·3	6·3	5·8	5·6	5·9	5·9	6·1
November	-	6·6	7·1	7·7	7·8	7·5	7·2	7·1	6·9	6·9	7·1	6·9	6·2	5·9	6·2	6·3	6·4	6·9	7·3	7·0	6·7	6·7	6·6	6·3	6·3
December	-	7·4	6·9	6·8	6·8	6·8	7·1	7·3	7·3	6·8	6·8	6·8	6·1	5·9	6·2	6·6	6·8	6·3	5·5	5·1	5·3	5·9	6·6	6·8	7·1
Year	-	6·0	6·0	6·1	6·3	6·2	6·0	5·9	5·8	5·7	5·4	5·0	4·5	4·5	4·7	4·7	4·9	5·0	5·0	4·9	4·8	5·0	5·2	5·1	5·5

SEASONS.

Dec. to Feb.	-	7·4	7·0	7·0	7·0	7·0	6·9	6·9	7·1	7·0	6·8	6·5	6·1	6·2	6·7	7·0	7·2	7·1	6·7	6·2	6·1	6·5	6·9	7·1	7·3
Mar. „ May	-	5·3	5·0	4·7	5·0	5·2	5·1	4·7	4·6	4·5	4·3	4·0	3·8	3·9	3·8	3·7	3·8	4·0	4·0	3·9	4·1	4·4	4·5	4·5	4·9
June „ Aug.	-	4·6	4·8	5·0	5·1	5·1	5·0	5·0	4·7	4·3	4·1	3·9	3·3	3·2	3·3	3·2	3·3	3·6	3·7	3·7	3·7	3·8	3·6	3·4	3·8
Sept. „ Nov.	-	6·5	7·1	7·7	7·9	7·6	7·1	7·0	7·0	6·9	6·8	6·4	5·4	4·9	5·0	5·1	5·2	5·4	5·8	5·7	5·4	5·4	5·6	5·6	5·9

Table III.—Average Rainfall.—FREQUENCY—*continued.*

STONYHURST.

—	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January -	5·7	5·7	5·8	6·1	6·5	6·9	7·2	7·0	6·5	6·6	6·8	5·7	5·0	4·7	4·2	4·1	4·6	5·4	5·8	5·5	5·1	4·8	4·8	5·2
February -	5·2	4·9	4·9	5·0	5·4	6·0	6·7	6·9	6·7	6·9	6·4	4·3	3·2	3·2	3·5	4·2	4·4	4·1	3·8	3·9	4·4	4·9	5·3	5·4
March -	5·0	5·3	5·4	5·3	5·2	5·1	5·2	5·6	6·2	6·5	6·4	3·7	3·3	3·5	3·9	4·2	4·3	4·7	5·4	5·6	5·3	5·1	5·1	5·0
April -	2·7	2·9	3·2	3·9	4·7	5·0	5·0	5·5	5·9	5·3	4·1	3·2	3·1	3·5	3·8	4·2	4·3	4·2	4·0	3·6	3·2	3·1	2·9	2·6
May -	3·8	3·9	4·1	4·6	5·1	5·5	6·2	6·6	6·2	5·9	5·5	4·4	3·6	3·5	3·8	3·9	3·8	3·4	3·0	3·0	3·1	2·9	2·9	3·4
June -	4·7	4·8	4·9	5·1	5·5	5·7	5·6	5·3	5·1	5·1	4·7	4·0	4·0	4·5	5·0	5·5	5·5	5·1	5·1	5·2	4·9	4·7	4·6	4·7
July -	6·2	6·6	7·0	7·5	7·7	7·6	7·6	7·1	6·4	6·3	6·1	5·2	4·8	4·8	4·7	4·6	4·4	4·4	4·5	4·7	5·0	5·5	5·7	5·8
August -	6·0	6·3	6·1	6·1	6·4	7·0	7·5	7·4	7·0	6·4	5·8	5·0	4·5	4·6	5·0	5·1	4·8	4·8	5·1	5·3	5·3	5·0	4·9	5·2
September -	5·2	5·7	6·3	6·8	7·0	7·3	7·3	6·8	6·2	6·1	5·4	4·1	3·5	3·7	3·9	4·2	4·6	5·1	5·3	5·4	5·3	5·1	4·9	4·9
October -	6·7	7·2	7·8	8·0	8·1	8·2	8·3	8·0	7·5	8·1	7·9	5·9	5·1	5·5	5·6	5·7	6·1	6·4	6·4	5·9	5·8	5·9	6·0	6·4
November -	5·9	6·4	6·6	6·5	6·5	6·4	6·4	6·5	6·2	6·5	6·4	4·9	4·0	4·2	4·6	4·8	4·8	4·8	4·9	4·8	5·0	5·1	5·2	5·5
December -	6·7	6·8	6·9	6·9	6·8	6·9	7·3	7·6	7·6	7·9	7·4	5·4	4·4	4·9	5·6	6·0	6·1	6·2	6·4	6·2	5·8	5·6	5·9	6·5
Year -	5·3	5·5	5·7	6·0	6·2	6·5	6·7	6·7	6·4	6·5	6·0	4·7	4·0	4·2	4·5	4·7	4·8	4·9	5·0	4·9	4·8	4·8	4·9	5·0

SEASONS.

Dec. to Feb. -	5·9	5·8	5·9	6·0	6·2	6·6	7·1	7·2	6·9	7·1	6·9	5·1	4·2	4·3	4·4	4·8	5·0	5·2	5·3	5·2	5·1	5·1	5·3	5·7
Mar. „ May -	3·8	4·0	4·2	4·6	5·0	5·2	5·5	5·9	6·1	5·9	5·0	3·8	3·3	3·5	3·8	4·1	4·1	4·1	4·1	4·1	3·9	3·7	3·6	3·7
June „ Aug. -	5·6	5·9	6·0	6·2	6·5	6·8	6·9	6·6	6·2	5·9	5·5	4·7	4·4	4·6	4·9	5·1	4·9	4·8	4·9	5·1	5·1	5·1	5·1	5·2
Sept. „ Nov. -	5·9	6·4	6·9	7·1	7·2	7·3	7·3	7·1	6·6	6·9	6·6	5·0	4·2	4·5	4·7	4·9	5·2	5·4	5·5	5·4	5·4	5·4	5·4	5·6

Table III.—Average Rainfall.—Frequency—*continued.*

KEW.

——	M.	—	2.	—	4.	—	6.	—	8.	—	10.	—	N.	—	2.	—	4.	—	6.	—	8.	—	10.	—
January - -	3·2	2·9	2·7	2·7	2·8	2·9	3·5	4·2	4·3	4·4	4·3	3·6	3·5	3·9	3·7	3·6	3·6	3·2	2·9	3·0	3·0	2·7	2·8	3·2
February - -	2·9	3·1	3·2	2·9	2·5	2·4	2·6	2·7	2·7	2·9	2·8	2·2	2·1	2·7	2·9	2·5	2·5	2·7	2·7	2·8	3·0	2·8	2·5	2·6
March - -	2·2	2·1	1·9	2·2	2·6	2·6	2·6	2·6	2·6	2·9	2·7	2·1	2·2	2·6	2·5	2·4	2·2	2·3	2·4	2·4	2·5	2·2	1·8	1·9
April - -	3·0	2·8	2·5	2·4	2·6	3·0	3·4	3·5	3·2	3·3	3·4	3·0	3·2	3·6	3·2	3·0	3·5	3·6	3·3	2·9	2·7	2·7	2·6	2·7
May - -	2·5	2·3	2·4	2·8	2·9	2·6	2·4	2·2	2·2	2·5	2·7	2·3	2·3	2·8	3·1	3·2	3·0	2·8	2·5	2·2	2·0	1·8	1·9	2·3
June - -	2·3	2·0	1·9	2·2	2·5	2·7	2·4	2·1	2·2	2·7	2·9	2·4	2·2	2·2	2·3	3·1	3·6	3·5	3·4	3·2	2·9	2·9	3·1	2·8
July - -	2·1	2·0	1·8	1·6	1·8	2·4	2·9	2·9	2·7	2·7	2·9	3·0	3·1	3·3	3·4	3·5	3·4	3·0	2·8	2·4	2·4	2·5	2·1	2·0
August - -	2·5	2·7	2·6	2·5	2·7	2·7	2·4	2·1	1·9	1·9	2·3	2·6	3·0	3·3	3·3	3·0	2·7	2·8	2·5	2·0	2·1	2·5	2·6	2·4
September -	2·6	2·5	2·5	2·6	2·7	2·5	2·3	2·0	1·7	2·6	3·8	3·0	2·1	2·4	2·5	2·2	2·5	3·0	2·9	2·8	2·8	2·6	2·5	2·6
October - -	2·8	3·3	3·4	3·6	3·7	3·5	3·4	3·7	3·9	4·3	4·6	4·2	4·1	4·4	4·3	4·1	3·9	3·5	3·2	3·2	3·0	2·8	2·6	2·4
November -	3·5	3·2	3·1	3·2	3·3	3·3	3·0	2·9	3·0	3·7	4·4	3·5	2·9	3·3	3·4	3·6	3·7	3·8	3·6	3·3	3·2	3·4	3·6	3·7
December -	3·0	2·6	2·7	2·9	3·0	3·1	3·1	3·0	2·9	2·9	3·0	2·8	2·7	2·9	3·2	3·6	3·6	3·2	3·0	2·9	2·7	2·9	3·1	3·2
Kew-Year -	2·7	2·6	2·6	2·6	2·8	2·8	2·8	2·8	2·8	3·1	3·3	2·9	2·8	3·1	3·2	3·1	3·2	3·1	2·9	2·8	2·7	2·7	2·6	2·7
Greenwich-Year	1·9	2·0	2·0	2·0	2·0	2·1	2·1	2·1	2·2	2·1	1·9	1·8	2·0	2·3	2·4	2·5	2·5	2·3	2·2	2·0	2·0	2·0	2·0	1·9

SEASONS.

Dec. to Feb. -	3·0	2·9	2·9	2·8	2·8	2·8	3·1	3·3	3·3	3·4	3·4	2·9	2·8	3·2	3·3	3·2	3·2	3·0	2·9	2·9	2·9	2·8	2·8	3·0
Mar. ,, May -	2·6	2·4	2·3	2·5	2·7	2·7	2·8	2·8	2·7	2·9	2·9	2·5	2·6	3·0	2·9	2·9	2·9	2·9	2·7	2·5	2·4	2·2	2·1	2·3
June ,, Aug. -	2·3	2·2	2·1	2·1	2·3	2·6	2·6	2·4	2·3	2·4	2·7	2·7	2·8	2·9	3·0	3·2	3·2	3·1	2·9	2·5	2·5	2·6	2·6	2·4
Sept. ,, Nov. -	3·0	3·0	3·0	3·1	3·2	3·1	2·9	2·9	2·9	3·5	4·3	3·6	3·0	3·4	3·4	3·3	3·4	3·4	3·2	3·1	3·0	2·9	2·9	2·9

Valencia.—The frequency has a decided march, with a maximum in the early morning, and a minimum about mid-day, but the epochs of these extremes shift with the seasons and fall earlier in the summer months than in the winter. As regards the amplitude of the range, the ratio between the minimum and maximum is 1 : 1·6 in January, and 1 : 1·7 in December, while in June it is 1 : 3·2. On the mean of the year it is 1 : 1·85.

Armagh.—The figures exhibit a great contrast to those for Valencia, the ratio between the minimum and the maximum being only 1 : 1·3 on the mean of the year, and the actual values being 3·1 and 4·0 instead of 5·3 and 9·8 respectively. The morning maximum which characterized the Valencia curves is quite absent, and instead we find an afternoon maximum in several months, and in the curve for the year.

Glasgow.—At this observatory the figures for frequency are considerably higher than those for Armagh, and the chief feature of the curves is the reappearance of the early morning maximum in several months, especially in winter, with a decided minimum about noon, and a recovery in the afternoon. The same character comes out in the curve for the year.

Aberdeen.—The curves present little interest, the figures approach those for Armagh, and, on the mean of the year, the ratio of minimum to maximum is only 1 : 1·2. The curve is nearly a straight line.

Falmouth.—At this observatory the values are higher than at any other except Valencia, and the curves of these two stations resemble each other in the appearance of the early morning maximum and the noon minimum. The Falmouth curves, however, possess a character of their own, for in four of the months (March, April, May, and December), the absolute maximum falls at midnight, a phenomenon which does not appear elsewhere, and of which the explanation is not obvious. The relation of minimum to maximum is 1 : 1·4.

Stonyhurst.—The values approach those for Falmouth closely on the average of the year, but in individual months there are decided differences, the winter being drier and the summer wetter at the northern observatory. That this latter statement is correct is shown by the fact that the maximum frequency at Stonyhurst is 7·7 in July and 7·5 in August, while in the same months at Falmouth it is 5·1 and 5·3 respectively. The early morning maximum is strongly marked, as is the mid-day minimum, in the yearly curve. In several months the principal feature is the sudden change from 10 a.m. to noon. The ratio of minimum to maximum is 1 : 1·7.

Kew.—The curves at this observatory show the least range of any, and the chief characteristic of the annual curve is the entire disappearance of the early morning maximum, that in the afternoon, which has already been noticed elsewhere (Glasgow and Armagh), being the sole marked one, and covering the period from 1h. to 5h. p.m. The 10h. a.m. maximum is ignored in this brief summary, for the reason already explained, but it should be noticed that there is a slight rise at midnight in the annual curve. The ratio of minimum to maximum is 1 : 1·27.

Comparing the annual curve for Kew with that for Greenwich, in Mr. Glaisher's paper, already quoted, we find an interesting agreement in every particular except as to the maximum at 10h. a.m., of which there is no trace at Greenwich, probably because the friction of the recording portion of the instrument was less. The absolute maximum occurs at 3h.-4h. p.m. For the rest of the 24 hours, with the exception of the minimum at 11h. a.m., the curve is nearly a horizontal line.

Summarizing the outcome of the entire investigation, it appears that as regards quantity there is little regularity in the fall except at Valencia, where there is a decided minimum about 3h. p.m. At the other stations the regular march of the curve is disturbed by heavy showers, but we see that, for instance, at Armagh, the hour of minimum at Valencia is characterized by a relative maximum, and this appears to a greater or less degree at several other stations. This would therefore seem to indicate that the phenomenon of the afternoon minimum is proper to the surface of the ocean, as Valencia is more exposed to sea influence than any of the other observatories.

As regards Frequency, Valencia again is the only place that shows a definite range in all months. Here the greatest frequency of fall, the time that precipitation is most likely to occur, is the early morning, and the driest period of the day is about noon. At Kew, the most continental station, the conditions are reversed, the amount of variation is slight, but the frequency is decidedly greater in the afternoon than during the night hours and the early morning. The maximum in the early morning appears with more or less distinctness at all the observatories except Kew and Armagh.

APPENDIX No. III.

REPORT ON EVAPORIMETERS.

COMPARISON of OBSERVATIONS of the RATE of EVAPORATION of WATER as given by different INSTRUMENTS.—By W. N. SHAW, M.A.

I.—*Instruments employed for the Observations.*

Observations were taken with four instruments, each of different character. They were exposed so that the atmospheric conditions should be as nearly as possible the same for each, and read simultaneously at intervals of a day or more.

The instruments were :—

(1.) Wild's Evaporimeter (described in *Carl's Repertorium*, X. p. 273, and in Jelinek "*Anleitung zur Anstellung meteorol. Beob.*," p. 105).

Evaporation takes place from a free surface of water, in a shallow cylindrical dish supported on the short arm of a lever balance. The longer arm, acting as a counterpoise, is provided with a pointer which moves over a graduated quadrantal arc, and the loss of weight, due to the evaporation of water from the dish, is indicated by the change in the position of the pointer on the scale. The diameter of the dish is 178 mm. During the earlier part of the period of observation the vertical position of the rod supporting the dish was maintained by a flat strip of metal, the friction of which, when the dish was full of water, was considerable, and prevented the readings being taken to a greater degree of accuracy than one scale division. Subsequently, the strip of metal was replaced by a wire, and the readings could then be taken to one tenth of a division.

After the instrument had been exposed for two days a film of dust was formed on the surface of the water, which became more and more obvious as the exposure was continued.

(2.) Lamont's Instrument (*Zeitschrift für Meteorologie*, IV. 81).

Evaporation takes place in this instrument also from a free surface of water, but the method of reading is quite different. The evaporation pan is a shallow cylinder with a slightly curved bottom, from the middle of which a narrow pipe leads to a vertical cylindrical reservoir of water containing a closely fitting piston. The position of this piston in the cylinder is adjustable by means of a screw which moves the piston vertically, and it can be read by a vertical scale attached to the piston, a pointer being attached to the cylinder. The method of observing is as follows: The piston is screwed up so as to allow the water in the evaporation pan to run into the reservoir, leaving the connecting tube just full, so that the water just makes the curved surface of the bottom of the pan continuous; the scale is then read and the water driven by the piston up to within a little of the top of the pan, and the evaporation allowed to take place; the piston is then raised so that the water sinks again from the pan to the same point as before, and the scale is read again. The difference of readings in scale divisions gives the depth of water evaporated in tenths of lines (Paris standard). There are two uncertainties about observations with this instrument. In the first place, the last portion of water drains only slowly from the pan when the piston is raised; so that readings differing by several scale divisions may be obtained, according to the time the pan is allowed to drain. With practice, however, errors due to this cause may, to a certain extent, be avoided. In the second place, the annular space, between the piston and cylinder, supports an amount of water in consequence of capillary action, and this amount is by no means constant, so that if the piston is raised and then lowered again the readings differ considerably. For this difficulty I do not think that practice affords any remedy; we can only hope and assume that at different observations there is the same amount of water suspended. The dust film on the surface occurs in this instrument too.

The diameter of the evaporating surface in this instrument is about 3 inches.

3. De La Rue's Instrument.

In this the water evaporates from a surface of moistened parchment paper, stretched over a shallow drum kept full of water which is supplied from a cylindrical reservoir giving about 6 inches head. Into this vessel dips a narrow metal tube forming the only opening into a graduated cylinder of glass about 6 inches high and 1½ inch diameter. This glass cylinder is originally filled with water and the tube leading from it, which dips into the reservoir, is perforated laterally. The water in the reservoir is therefore maintained at a constant level by a flow of water from the glass cylinder whenever the lateral opening becomes exposed to the air. The amount of water evaporated is, therefore, given by the graduations on the glass cylinder, which are so drawn as to express the evaporation in hundredths of an inch.

The most noticeable difficulty with this instrument arises from the fact that it is intermittent in its action, as the water in the graduated vessel is replaced only by the ascending of large bubbles of air. At some observations there had been no change of level in the water in the tube during the interval, the slightest shaking determined a large rise of bubbles, and any reading within wide limits could be obtained by judicious shaking.

A reading with this instrument might also, when the graduated vessel is nearly empty, be sensibly affected by a change of temperature or of barometric pressure, but these effects would be small compared with the uncertainty above mentioned.

The diameter of the evaporating surface in this instrument is 5 inches.

(4.) Piche's Instrument.

This consists simply of a graduated cylindrical tube of glass closed at one end and having the open end ground flat and covered by a disc of blotting paper about three times as broad as the tube. This is kept in its place by a disc of the same diameter as the tube and attached to it by a spring. The instrument is hung vertically with the closed end upwards, so that as the water evaporates from the wet paper a succession of very small bubbles of air rise to supply its place in the tube. The amount evaporated can be inferred from the scale engraved on the glass of the tube.

There are three difficulties with this apparatus:—

(1.) A certain difference of pressure between the air inside and outside the tube is required to force the bubbles through the paper, and this may not be constant.

(2.) If the temperature of the air varies considerably during the observations, a condensation of water takes place on the sides of the tube above the water surface. The effect of this may be considerable when the tube is nearly empty.

(3.) The difficulty due to considerable variations of temperature and barometric pressure mentioned in the case of De La Rue's instrument. The error due to any of these causes is, however, likely to be very small.

The area of the evaporating surface is in this case about 11·1 square centimetres, assuming the evaporation to take place from both sides of the blotting paper.

II.—*Reduction of the Observations to Comparable Measures.*

The observations taken with each instrument have been reduced to the same measure by expressing in *millimetres* the depth of water evaporated from the area exposed in each case.

(1.) Wild's Instrument.

The graduations on the scale are stated (Carl's Rep.) to express the evaporation from the dish in tenths of millimeters. This was verified by determination of the diameter of the dish and the number of scale divisions passed over by the pointer in consequence of the addition of known weights of water. A rough determination gave one scale division equivalent to ·107 millimetres, and the graduation was therefore taken to be as stated above.

(2.) Lamont's Instrument.

The scale divisions for this are stated to be equivalent to tenths of Paris lines.

This was also verified. The diameter of the evaporating cylinder is 80·8 mm. and the diameter of the piston 47·5 mm., and 85 scale divisions are equivalent to 56 mm. Hence one scale division corresponds to an evaporation of ·2255 mm., and one Paris line is equal to 2·258 mm.

The indications of this instrument were therefore multiplied by ·225 to express the evaporation in millimetres.

(3.) De La Rue's Instrument.

The indications of the instrument are given in hundredths of an inch, also verified. The factor for conversion to millimetres is therefore ·254.

(4.) Piche.

The value in millimetres of the indications of this instrument was determined by calculation of the length of the scale divisions, the area of tube, and the area of the evaporating surface.

The measurements gave—

Internal diameter of tube - - -	11 mm.
External „ - - -	14 mm.
Diameter of paper disc - - - -	30 mm.
150 scale divisions - - - -	169·5 mm.

A part of the disc of paper was covered by a brass disc, equal in diameter to the external diameter of the tube. Hence we get, assuming evaporation to take place from both sides of the surface, evaporation of 0·097 mm., corresponding to one scale division. The instrument is therefore probably graduated to show the evaporation in tenths of millimetres.

The factors by which the readings must be multiplied in order to express the evaporation in millimetres are given in the following table, which also gives the areas and nature of the surfaces from which the evaporation takes place:—

TABLE I.

Instrument.	Nature of evaporating Surface.	Area of evaporating Surface.	Reduction Factor.
Wild - -	Free surface of water - -	245·8 sq. cm.	0·100
Lamont - -	„ „ - -	49·2 „ „	0·2255
De La Rue -	Wet parchment paper - -	125·6 „ „	0·254
Piche - -	Wet filter paper - - -	11·1 „ „	0·100

III.—*Arrangement of the Instruments for Observations.*

A number of preliminary experiments were made with the instruments exposed together, indoors, but the evaporation seemed to depend to such an extent upon the local circulation of the air that the positions of the instruments relatively to each other were of too great importance for the observations to be taken as registering evaporation under the same conditions. The instruments were ultimately exposed for observation in a summer-house in the Fellows' garden of Emmanuel College. This summer-house is a wooden erection, double-cased both at the sides and top; the interior is of semicircular plan, the diameter of the semicircle being the open part of the summer-house. It faces due north and is protected by trees and walls from the morning and evening sun. It forms accordingly a very good open screen for the evaporators. These were placed as far apart as possible, upon one table, about 4 feet square and 2 feet 6 inches from the ground; the whole set was covered by a wire cage to keep off the birds.

IV.—*Discussion of the Observations.*

The instruments were read consecutively from July 5 to August 9, 1882, at regular intervals at first of one day, subsequently every two days with an extra observation to make the *week* complete. The observations, reduced to millimeters by the factors given in the preceding Table (I.), are given below:—

TABLE II.

Interval.	Evaporation in Millimeters as given by			
	Wild.	Lamont.	De La Rue.	Piche.
July 5–6 - -	0·75	1·51	0·74	1·60
" 6–7 - -	1·10	1·60	1·65	1·95
" 7–8 - -	1·05	1·38	1·02	1·77
" 8–9 - -	0·50	0·88	1·02	1·18
" 9–10 - -	0·55	0·83	1·02	1·10
" 10–11 - -	0·61	1·01	1·10	1·50
" 11–12 - -	0·59	0·65	0·07	0·61
" 12–13 - -	0·37	0·95	R. 0·71	R. 1·12
" 13–15 - -	1·47	2·11	1·17	2·83
" 15–17 - -	1·52	2·37	2·06	3·05
" 17–19 - -	2·01	2·93	2·46	3·85
" 19–21 - -	1·78	3·04	R. 2·21	R. 3·90
" 21–23 - -	1·75	R. 2·73	3·33	3·65
" 23–25 - -	1·56	2·73	1·32	3·30
" 25–26 - -	R. 0·60	0·88	0·28	0·97
" 26–28 - -	R. 1·22	2·59	R. —	R. 2·67
" 28–30 - -	0·89	1·53	0·61	2·13
" 30–August 1 -	1·60	2·64	1·88	3·60
August 1–2 - -	0·65	1·17	0·76	1·50
" 2–4 - -	1·85	2·93	2·62	3·75
" 4–7 - -	2·70	R. 4·51	R. 2·34	R. 5·70
" 7–9 - -	1·40	2·59	2·41	3·07

To represent the observations graphically, I have plotted them upon sectional paper, in which abscissæ represent equal intervals of time (*see* Fig. I.) The points representing observations with the same instrument are connected by straight lines.

The continuous line shows the observations with Wild's instrument, and the fine dotted line those with De La Rue's, while the observations with the Piche and Lamont instruments are shown by the lines —.—.—. and —..—..—.. respectively.

An inspection of the numbers or of the lines representing the evaporation as measured by the different instruments shows at once that the divergence from day to day is not only very considerable, but also very irregular. If each of the instruments measures evaporation, the term must be understood to refer to some definition not at present explicitly stated. It might, however, be supposed that evaporation can be so defined that its value may be deduced from the readings of any one of the instruments by multiplying by some constant factor—that factor to be determined once for all for a particular instrument. If this be the case, the ratio of the measures of evaporation as recorded by different instruments for the various intervals would be constant, and would be represented by the ratio of any two corresponding ordinates of the curves for the two instruments as represented in the figure. That this is not so, for the daily intervals on which the figure is based, is sufficiently evident, but it might still be so if the evaporation be recorded only for weekly intervals. The amounts of evaporation for each of the five *weeks* are accordingly arranged in a Table (III.), and with a view of exhibiting the agreement or otherwise of the observations with the suggested constancy of the ratios, a diagram, Fig. II., has been formed in which the ordinates represent, not the evaporation, but the logarithms of the amounts of evaporation (expressed in millimetres). If the ratios before mentioned are constant, the differences of these logarithms will be constant, and accordingly the lines connecting the points representing the observations with the same instrument should form a series of parallel lines. This system of lines is drawn in the figure, and the lines for Wild's, Lamont's and Piche's instruments are nearly parallel, but not strictly so while the divergence for De La Rue's instrument is very marked. Some idea of the accuracy of concordance which is indicated may be obtained from the fact that a displacement of the point representing an observation though one millimetre represents an error of about 2 per cent., an error which is quite outside the error of reading for weekly observations.

TABLE III.—EVAPORATION IN MILLIMETRES PER WEEK.

Interval.	Wild.	Lamont.	De La Rue.	Piche.
July 5–12 - -	5·15	7·87	6·60	9·71
„ 12–19 - -	5·37	8·35	6·40	10·8
„ 19–26 - -	5·69	9·38	7·13	11·8
„ 26–August 2 -	4·36	7·94	(4·85)	9·9
August 2–9 - -	5·95	10·03	7·37	12·5

Again, if the indication for any one instrument is to be obtained from that of any other by merely multiplying by some ratio, constant for that pair of instruments, the value of that constant would be best obtained by taking the total evaporation from the two instruments during the whole period. The factors thus determined for the reduction of the indications of the rest of the instruments to the indications of Wild would be:—

De La Rue to Wild - - - -	0·8198
Lamont „ - - - -	0·5946
Piche „ - - - -	0·4848

The weekly observations with all the instruments *reduced by these factors* are given in the following Table (IV.), which also includes columns showing the percentage difference between the results so reduced:—

TABLE IV.

Interval.	Wild.	Lamont.	Percentage Difference.	Piche.	Percentage Difference.	De La Rue.	Percentage Difference.
July 5–12 -	5·15	4·79	− 7	4·72	−7	5·41	+ 5
„ 12–19 -	5·37	5·08	− 5	5·235	−2	5·25	− 2
„ 19–26 -	5·69	5·71	0	5·71	0	5·87	+ 3
„ 26–August 2	4·36	4·83	+10	4·80	+9	3·975	−10
August 2–9 -	5·95	6·11	+ 3	6·06	+2	6·04	+ 1

The parallelism of the percentage differences for Lamont and Piche is very striking, and seems to show that for some reason the Wild instrument tended to be become less and less sensitive as time elapsed. The indications are of two general a nature to allow of any very definite conclusion being arrived at; the only reason for a continuous diminution of sensitiveness, that depends upon the peculiarity of the instruments, is the formation of the film of dust which remains undisturbed upon the Wild surface, while in the Lamont instrument the liquid is repeatedly removed and replaced. Note was taken of the times at which the different instruments were refilled, with a view of testing whether the influence of this film could be observed. The times of refilling are denoted by a letter (R) in the Table (II.) of daily observations, but they are too irregular to supply any satisfactory data of comparison.

V.—*Causes of the Discrepancies between the Observations.*

The area of the evaporating surface appears to be the main cause of the very great differences between the indications of the different instruments. The following Table (V.) of the areas and the evaporation for the whole period will sufficiently show this:—

TABLE V.

Instrument.	Wild.	De La Rue.	Lamont.	Piche.
Area of evaporating surface in sq. c.c. -	245·8	125·6	49·2	11·1
Evaporation between July 5 and August 9 -	26·52	32·35	43·57	54·7

The evaporation is less as the area exposed to evaporation becomes greater. I have tried to express the relation between the evaporation and the area by some simple formula, but not with any success.

This, however, though accounting for the larger part of the differences, does not give by any means a complete explanation. The difficulties pointed out above in describing the working of the different instruments give rise, doubtless, to errors that can at present only be classed as accidental, and, moreover, in case the temperature of the air changes, we shall probably have the evaporating water at different temperatures in the different instruments, and I have not been able to find data to give any idea of what the effect of this difference is likely to be.

There is, again, the formation of the film of dust upon the surface of the evaporating water which must be of considerable influence upon the evaporation, and the numerical effect of this is also unknown. The instruments were arranged with a view to eliminate the effects due to the variations in the velocity of the air, which must of course be very considerable. It is, however, possible that some part of the differences may be due to this cause. I hope to be able shortly to complete some experiments upon the effect of temperature and velocity of air upon the evaporation, from which I shall be able to make some inference as to the probable effect of these causes.

The observations show plainly, therefore, that the amount of water evaporated from any surface of water depends on so many conditions besides those determined by the state of the air, that very little meteorological information can be obtained from them until the effect of these secondary conditions can be measured and allowed for.

Emmanuel College, January 29, 1884.

[NOTE. March 25, 1884.—Since the above was written, a fortnight's daily readings with four Piche instruments have been taken. They were exposed at the four corners of the same table as before. With reference to the centre of the table, their positions may, therefore, be identified as N.E., N.W., S.E., S.W. The daily observations are very fairly accordant (Table VI.):—

TABLE VI.

Interval.	N.E.	N.W.	S.E.	S.W.
March 2–3	5·9	5·1	5·4	5·3
„ 3–4	4·4	4·0	4·1	4·5
„ 4–5	11·2	10·4	10·7	10·0
„ 5–6	9·8	9·0	8·7	8·8
„ 6–7	6·1	6·5	6·3	6·0
„ 7–8	6·5	7·0	6·1	6·7
„ 8–9	6·9	6·1	6·4	6·2
„ 10–11	11·6	10·7	10·9	10·8
„ 11–12	7·5	7·3	7·5	6·7
„ 12–13	5·8	5·8	5·5	5·5
„ 13–14	7·6	6·9	7·0	7·0
„ 14–15	14·3	13·3	14·0	13·1
„ 15–16	13·9	12·6	—	12·7
„ 16–17	19·1	15·9	—	16·7

The result is very well expressed by tabulating the weekly observations thus:—

Interval.	N.E.	N.W.	S.E.	S.W.
March 2–9 - - -	50·8	48·1	47·7	47·5
„ 9–16 - - -	78·8	72·5	—*	72·5

It appears that while the N.E. position has a considerable advantage, the others give practically identical results. The N.E. position was occupied by De La Rue's instrument during the preceding observations. The cage was turned through the right angles at the end of the first week, and carried the evaporators with it, so that the differences are not due to the eccentricities of the individual instruments but probably to local air currents.]

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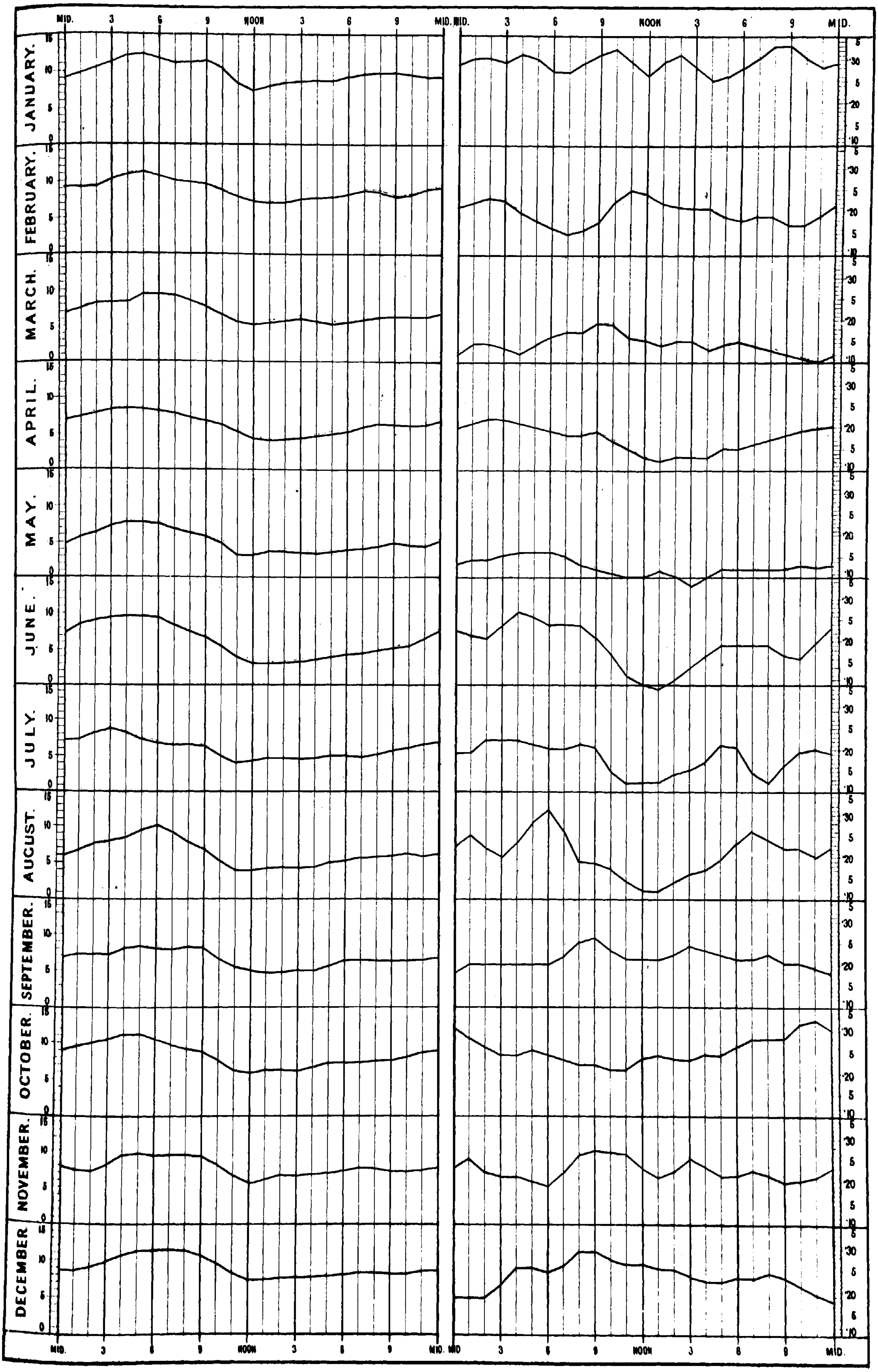
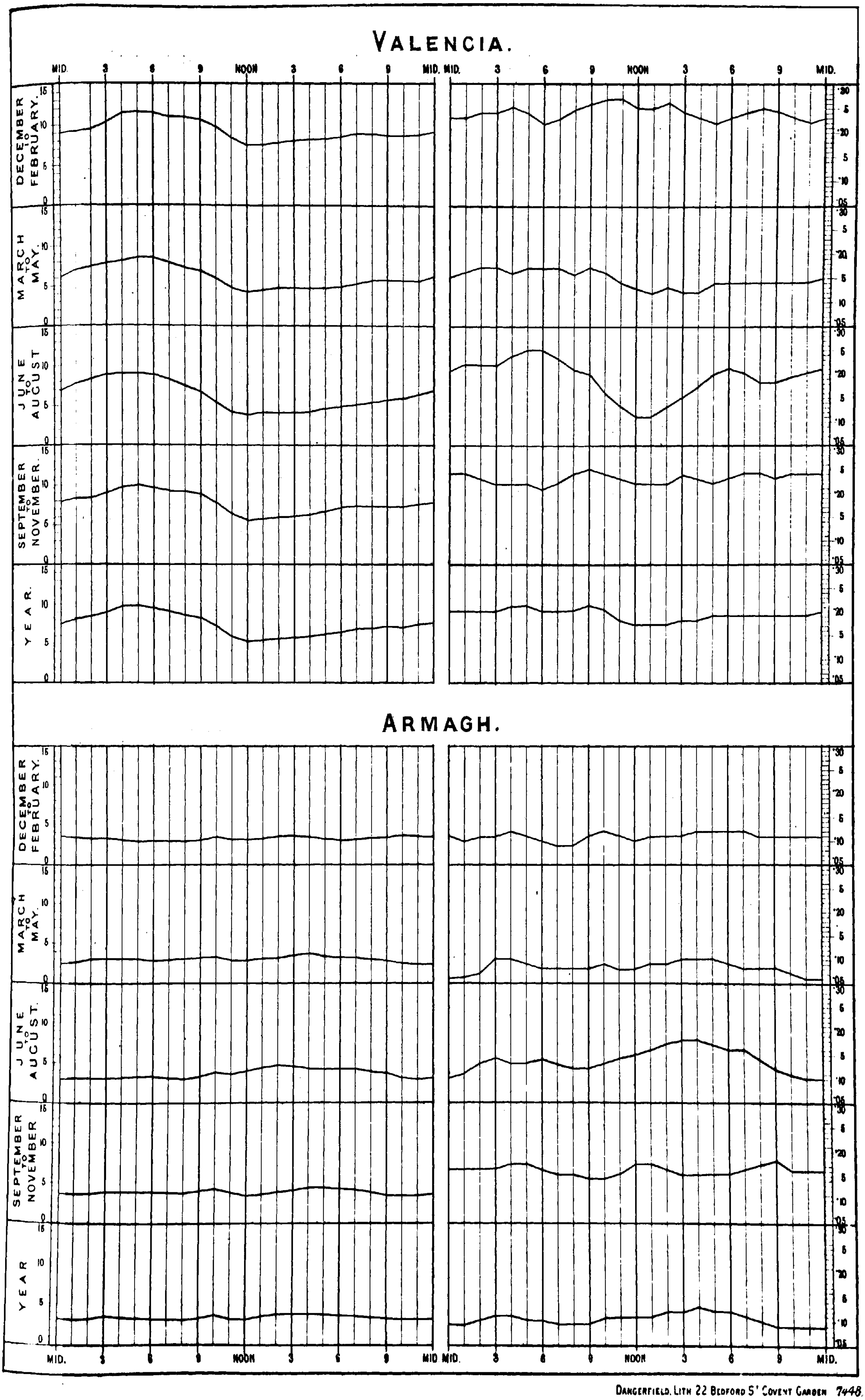
* The instrument placed here allowed too free a flow of water, so that it dripped on to the table before the end of the week.

VALENCIA.


Frequency. *Quantity.*

Dangerfield Lith 22 Bedford St Covent Garden 147.

Frequency. *Quantity.*



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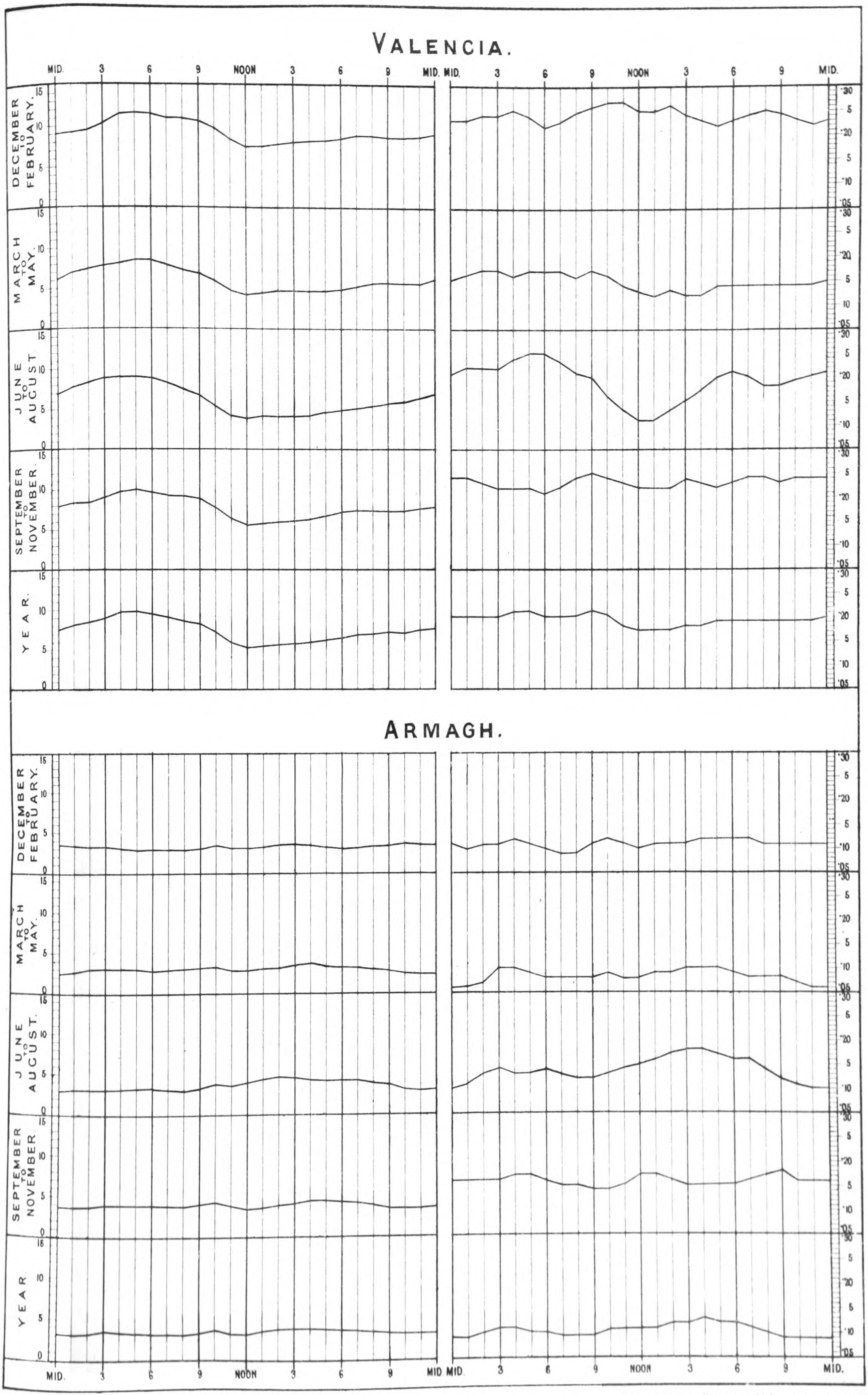
Frequency. *Quantity.*



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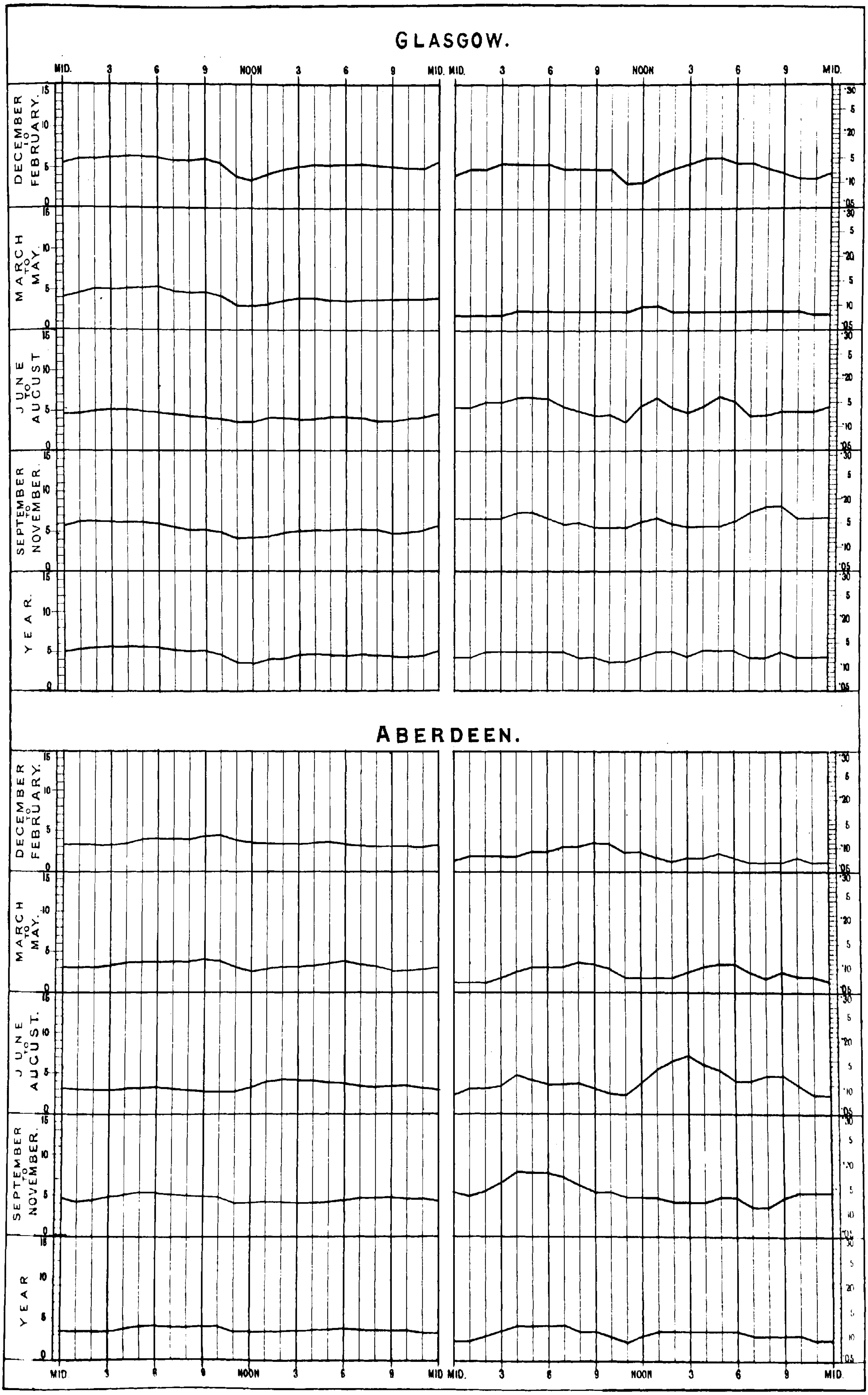
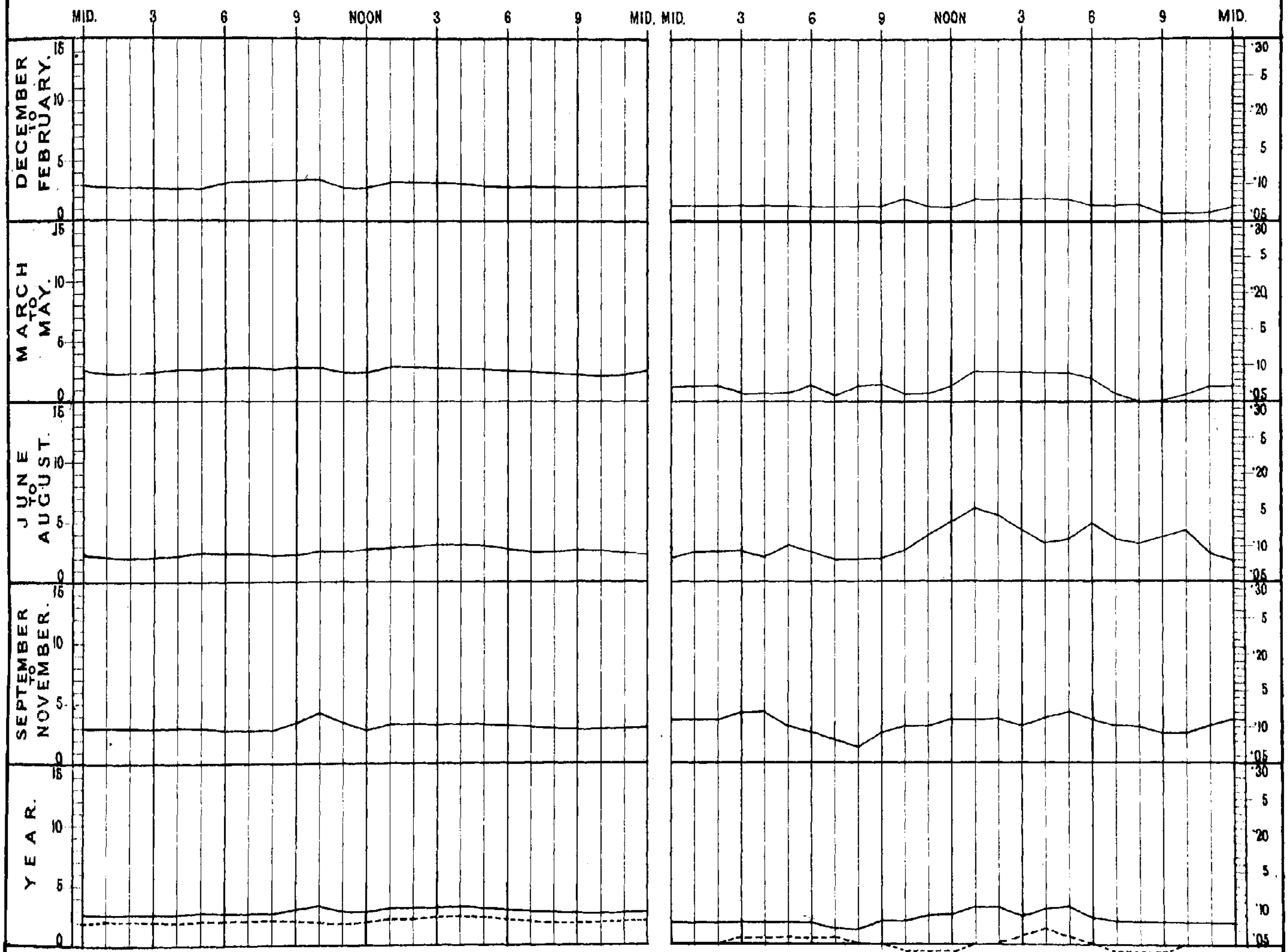
Frequency. *Quantity.*



DANGERFIELD, LITH 22 BEDFORD ST COVENT GARDEN 744A.

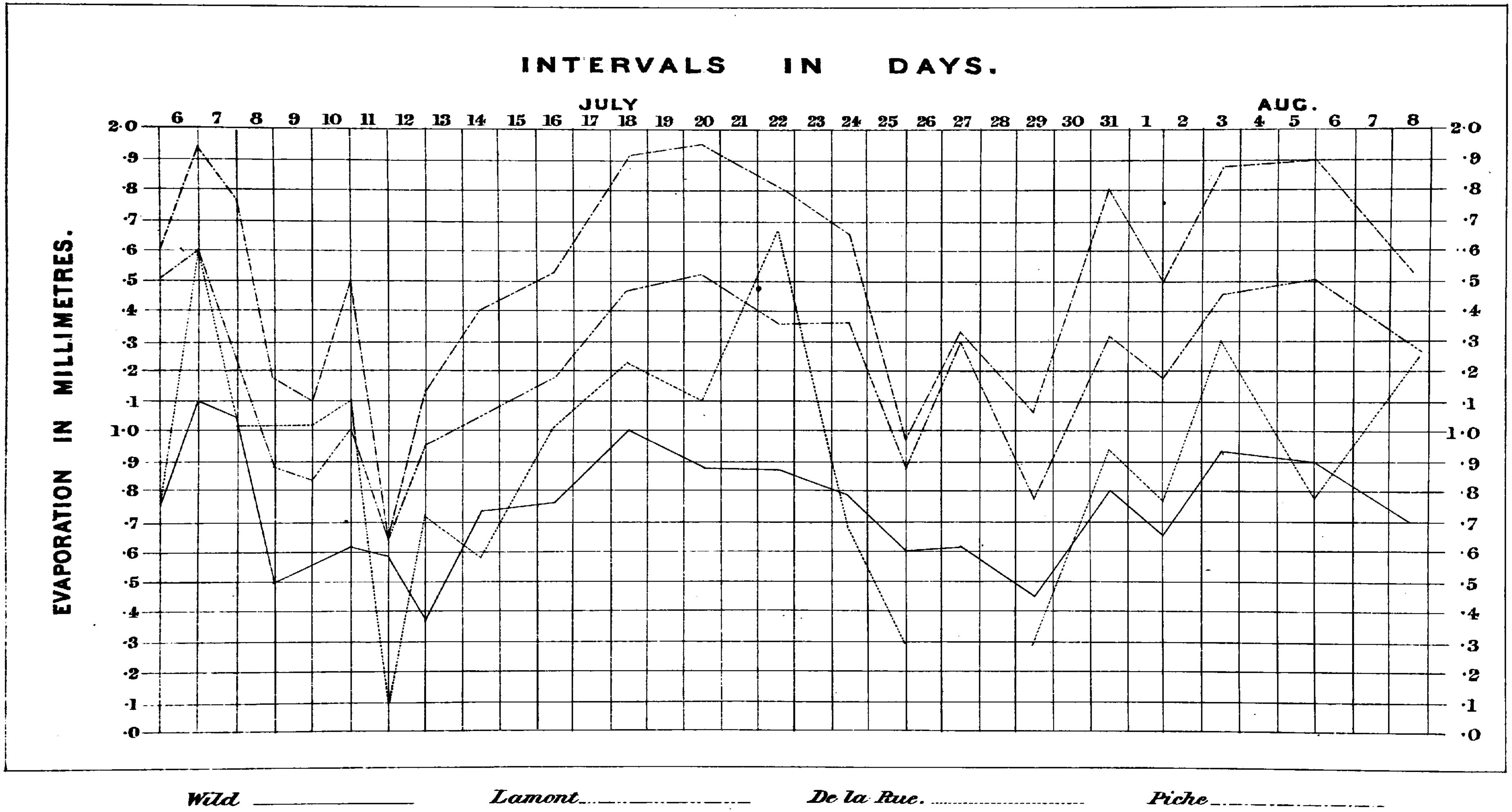
Frequency. *Quantity*

KEW.



Dotted lines are for Greenwich.

Danckerfield Lith 22 Bedford St Covent Garden 7448.



Dangerfield. Lith. 22. Bedford St. Covent Garden. 7494.

Fig. II.

FIGURE SHEWING THE LOGARITHMS OF WEEKLY EVAPORATION EXPRESSED IN MILLIMETRES.

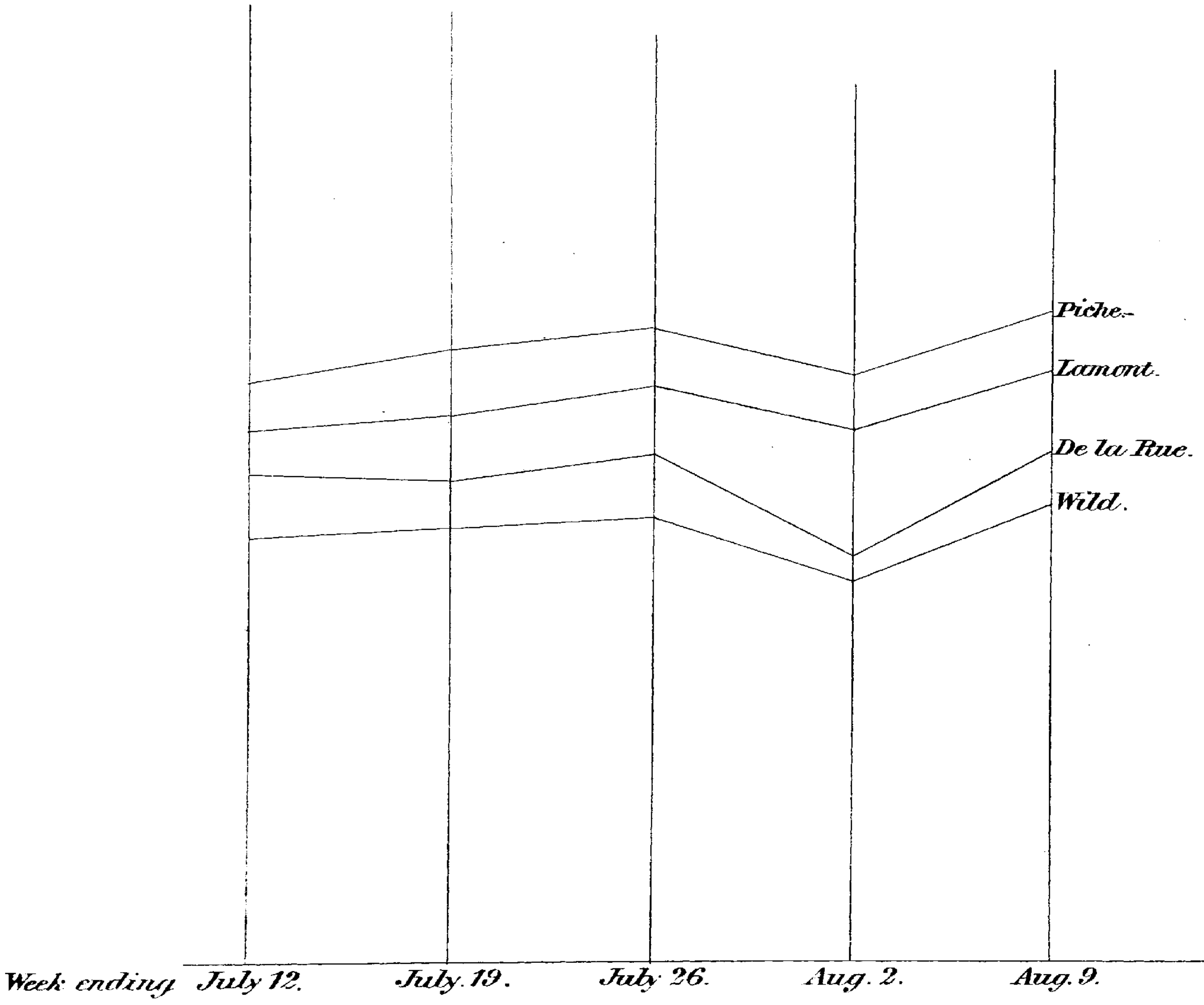


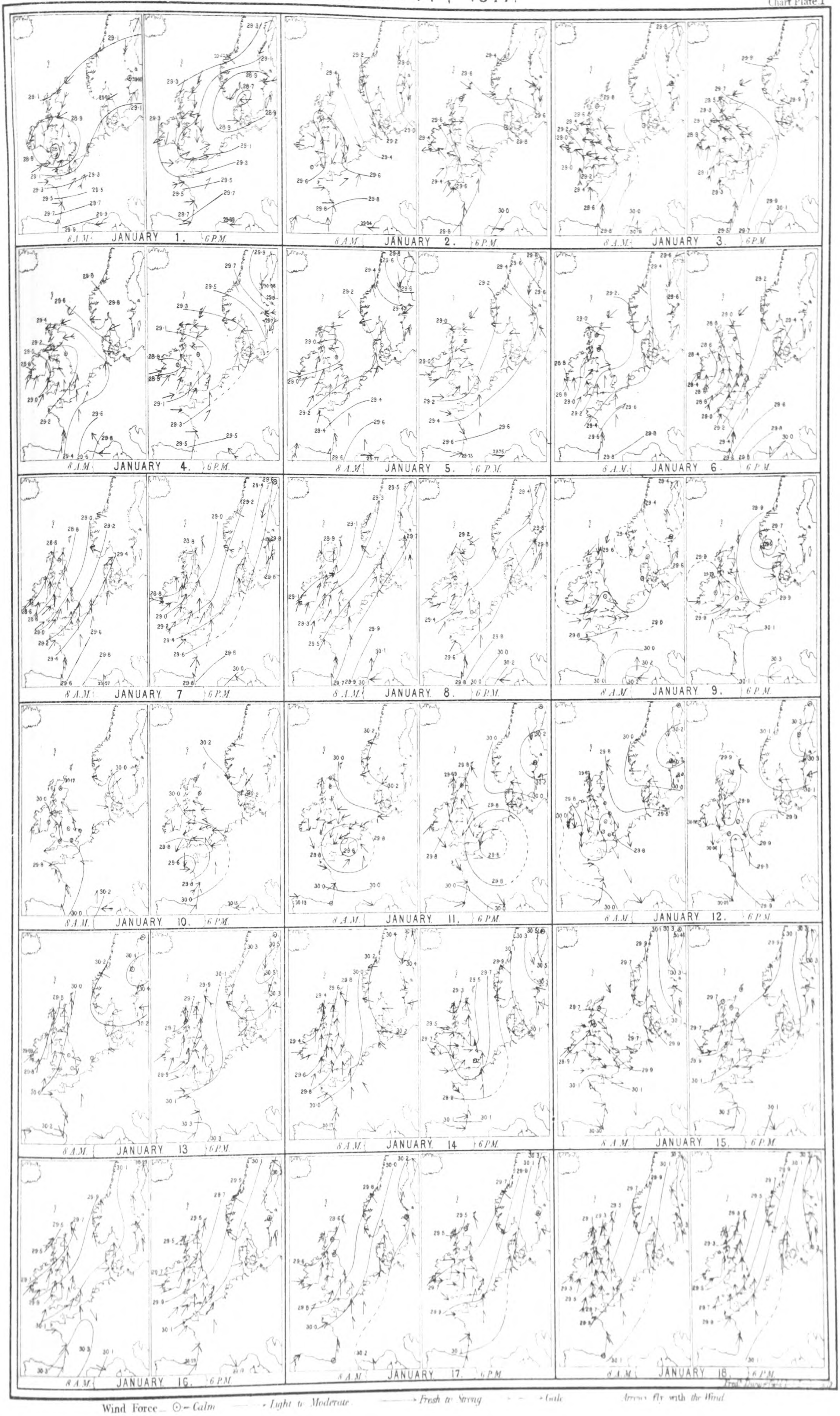
Table shewing the factors by which the evaporation must be multiplied to increase the ordinate in the figure by given amounts.

Increase of ordinate in millimetres.	*Corresponding factor.*	*Percentage increase.*
1	1 · 023	2 · 3
2	1 · 047	4 · 7
3	1 · 072	7 · 2
4	1 · 096	9 · 6
5	1 · 120	12 · 0
6	1 · 148	14 · 8
7	1 · 175	17 · 5
8	1 · 202	20 · 2
9	1 · 230	23 · 0
10	1 · 259	25 · 9
20	1 · 585	58 · 5
30	2 · 00	100

Dangerfield Lith 22 Bedford St. Covent Garden. 2194

JANUARY, 1877.

Chart Plate 1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8 A.M. JANUARY 5. 6 P.M.
8 A.M. JANUARY 6. 6 P.M.
8 A.M. JANUARY 7 6 P.M.
8 A.M. JANUARY 8. 6 P.M.
8 A.M. JANUARY 9. 6 P.M.
8 A.M. JANUARY 10. 6 P.M.
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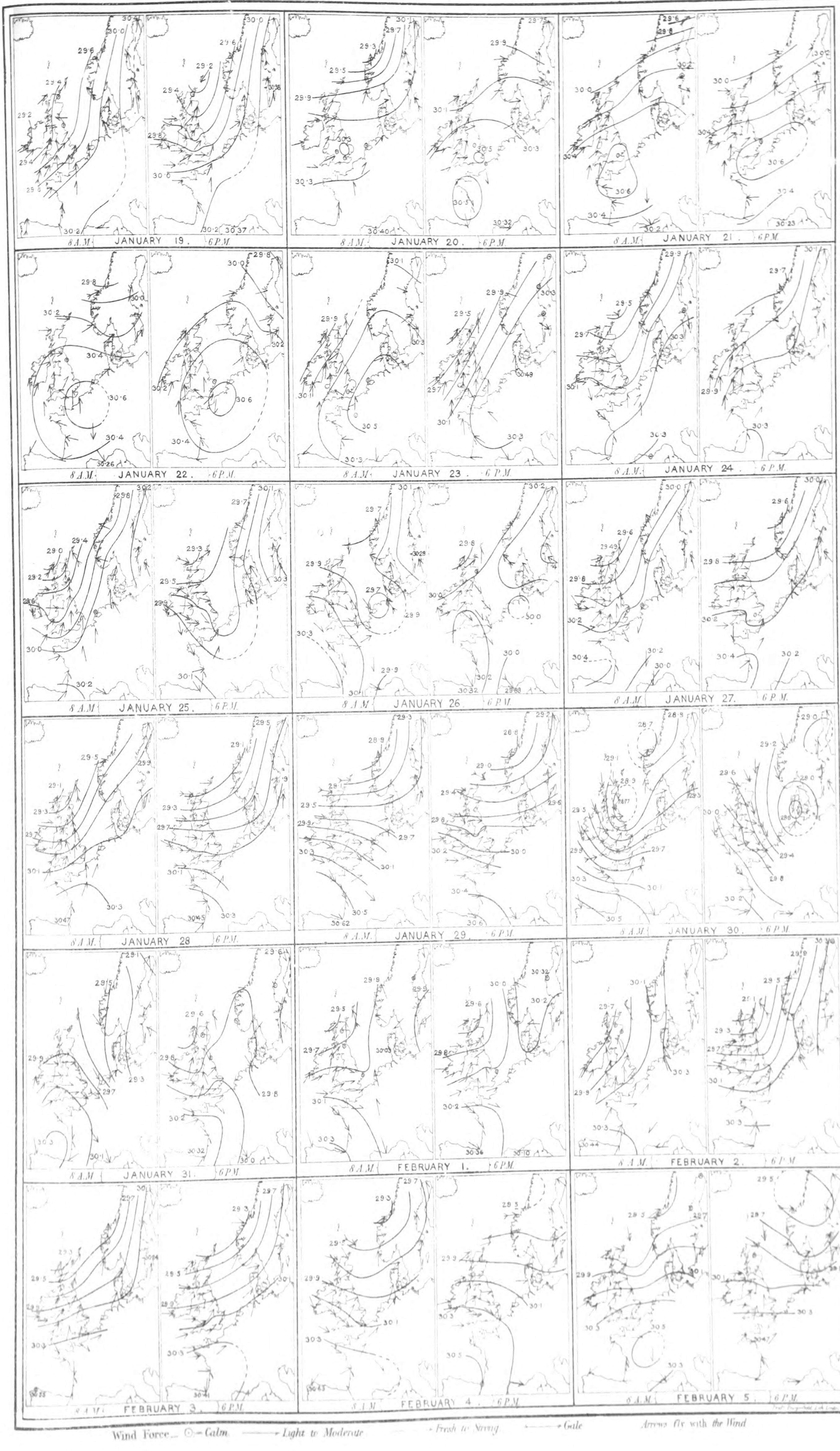
8 A.M. JANUARY 14 6 P.M.
8 A.M. JANUARY 15. 6 P.M.
8 A.M. JANUARY 16. 6 P.M.
8 A.M. JANUARY 17. 6 P.M.
8 A.M. JANUARY 18. 6 P.M.

Wind Force _ ⊙ – Calm —→ Light to Moderate. ——→ Fresh to Strong - - - → Gale Arrows fly with the Wind

JANUARY & FEBRUARY, 1877.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8 A.M. JANUARY 26. 6 P.M.
8 A.M. JANUARY 27. 6 P.M.
8 A.M. JANUARY 28 6 P.M.
8 A.M. JANUARY 29. 6 P.M.
8 A.M. JANUARY 30. 6 P.M.
8 A.M. JANUARY 31. 6 P.M.
8 A.M. FEBRUARY 1. 6 P.M.
8 A.M. FEBRUARY 2. 6 P.M.
8 A.M. FEBRUARY 3. 6 P.M.
8 A.M. FEBRUARY 4. 6 P.M.
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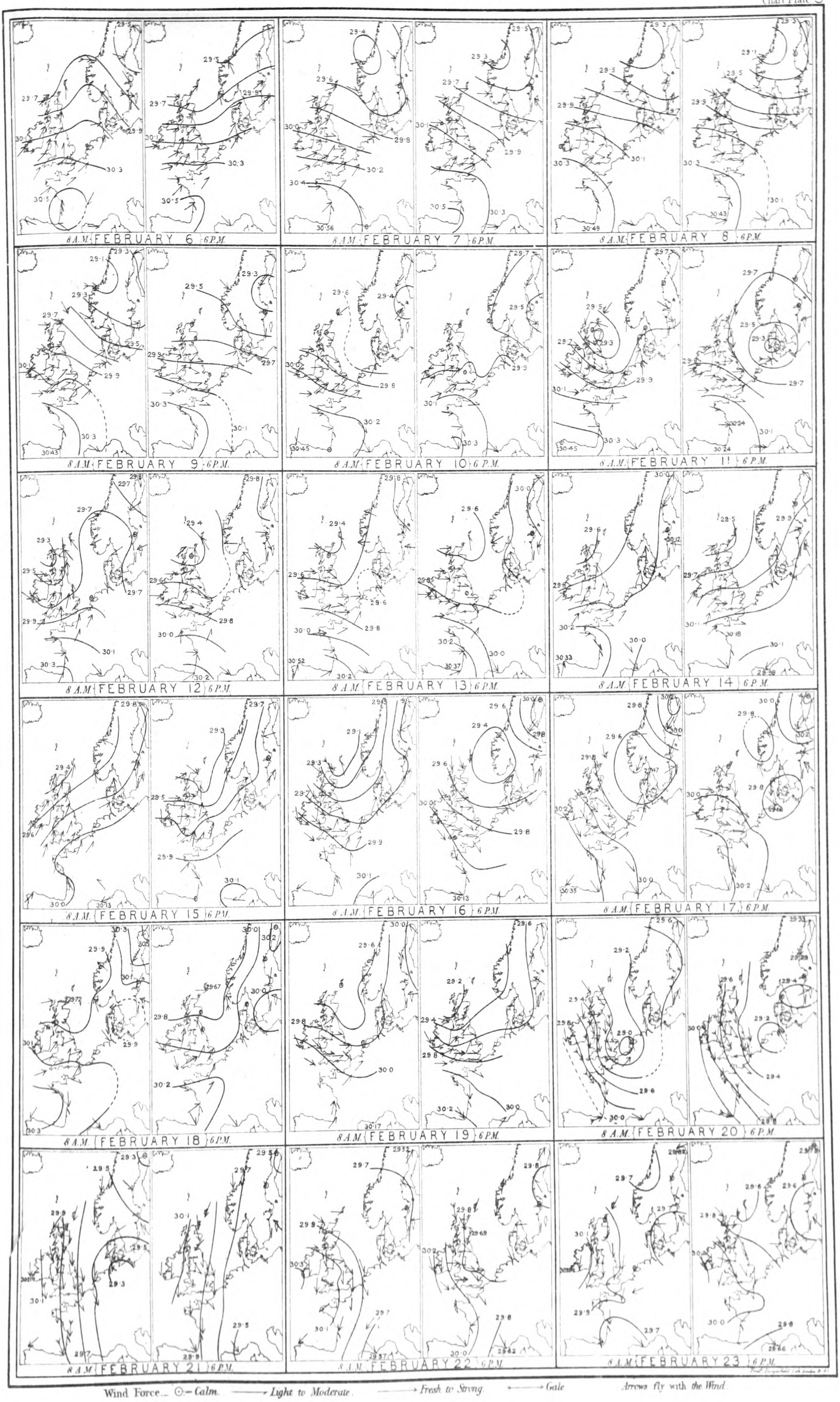
Wind Force _ ⊙ _ Calm. Light to Moderate. Fresh to Strong. Gale. Arrows fly with the Wind.

FEBRUARY, 1877.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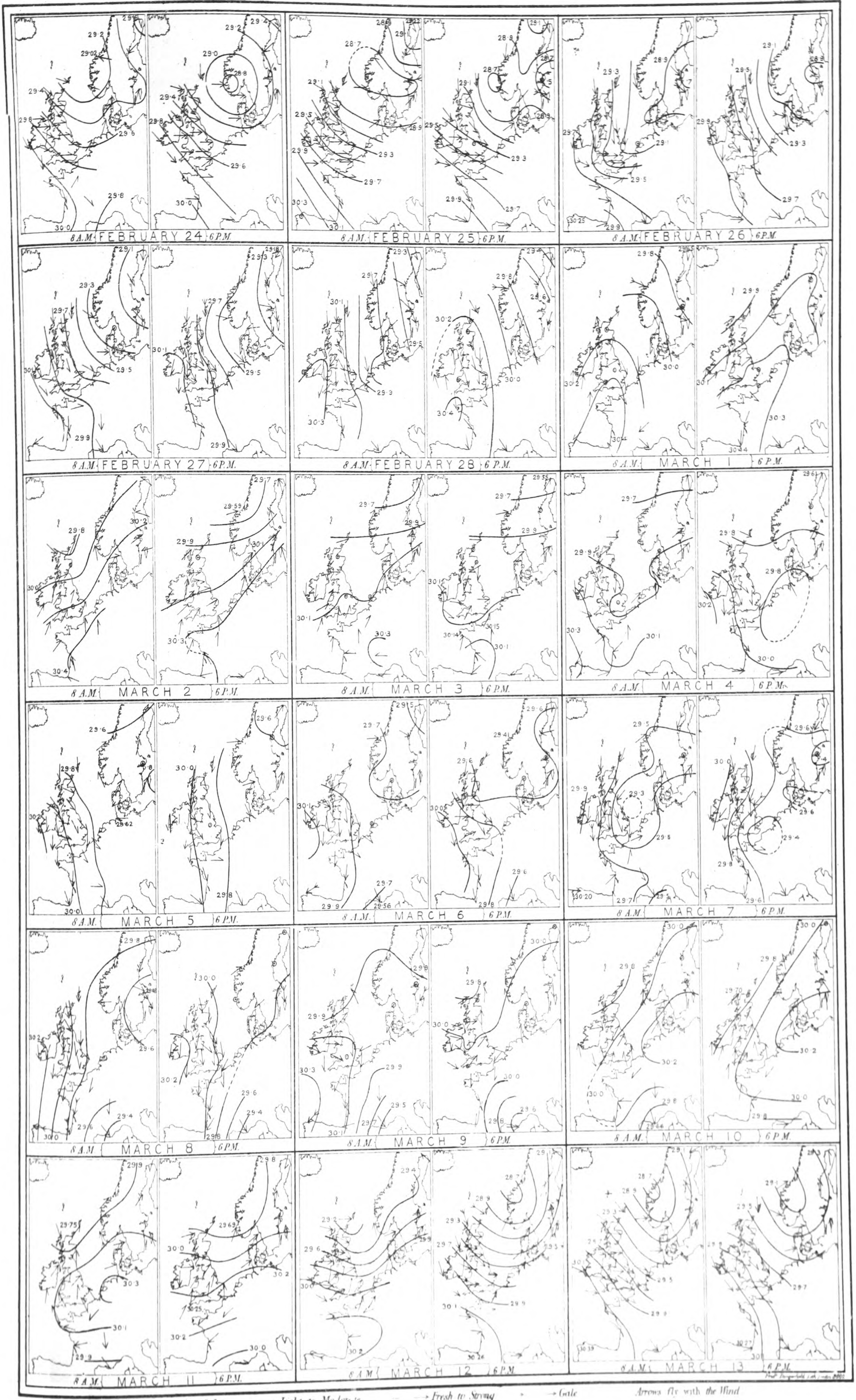
8 A.M. FEBRUARY 20 6 P.M.
8 A.M. FEBRUARY 21 6 P.M.
8 A.M. FEBRUARY 22 6 P.M.
8 A.M. FEBRUARY 23 6 P.M.

Wind Force — ⊙ — *Calm.* ⟶ *Light to Moderate.* ⟶ *Fresh to Strong.* ⟶ *Gale.* *Arrows fly with the Wind.*

FEBRUARY & MARCH, 1877.

Chart Plate 4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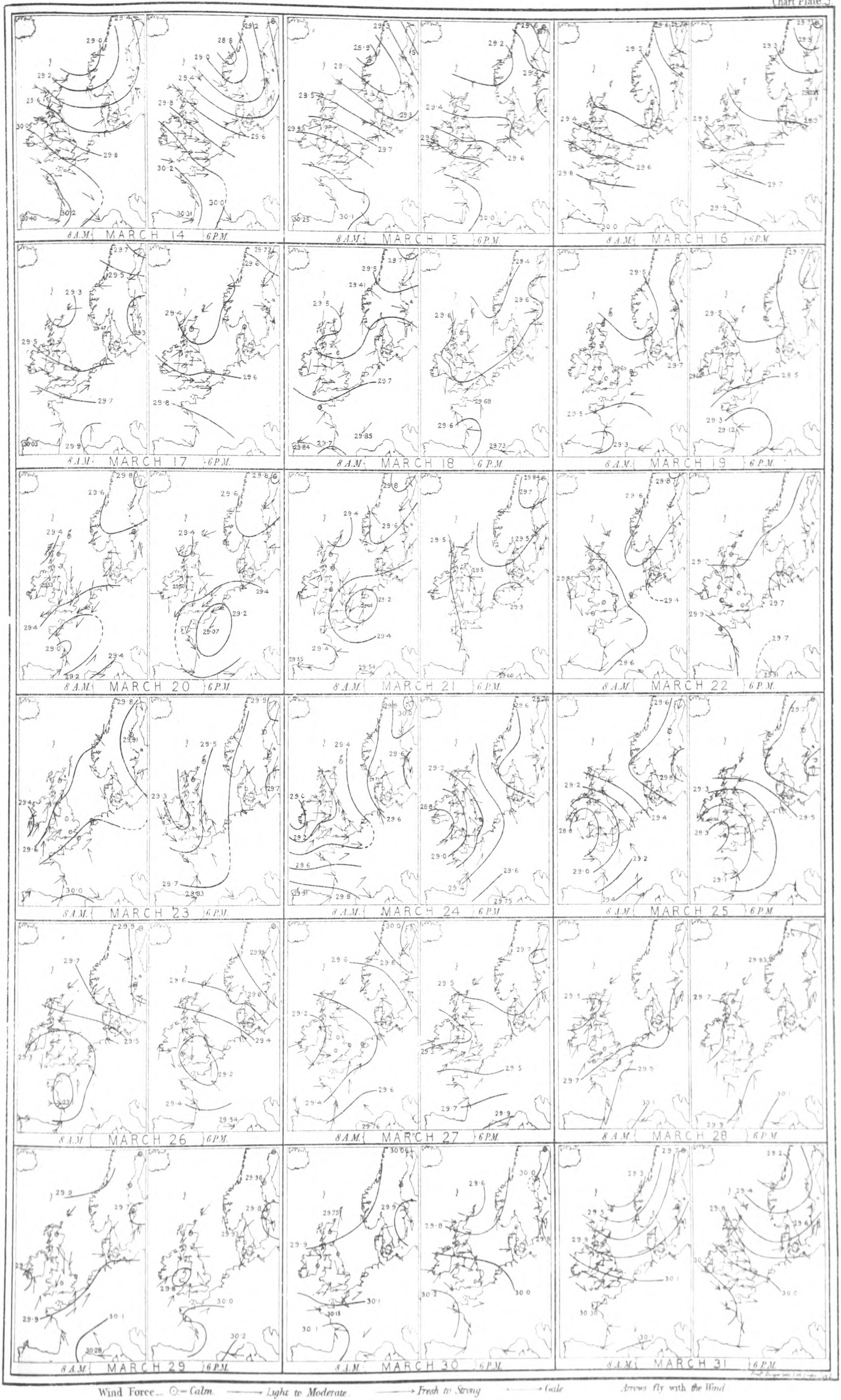
8 A.M. FEBRUARY 28 6 P.M.
8 A.M. MARCH 1 6 P.M.
8 A.M. MARCH 2 6 P.M.
8 A.M. MARCH 3 6 P.M.
8 A.M. MARCH 4 6 P.M.
8 A.M. MARCH 5 6 P.M.
8 A.M. MARCH 6 6 P.M.
8 A.M. MARCH 7 6 P.M.
8 A.M. MARCH 8 6 P.M.
8 A.M. MARCH 9 6 P.M.
8 A.M. MARCH 10 6 P.M.
8 A.M. MARCH 11 6 P.M.
8 A.M. MARCH 12 6 P.M.
8 A.M. MARCH 13 6 P.M.

Wind Force.. ⊙ - Calm ——→ Light to Moderate ——→ Fresh to Strong ——→ Gale Arrows fly with the Wind

MARCH, 1877.

Chart Plate 5.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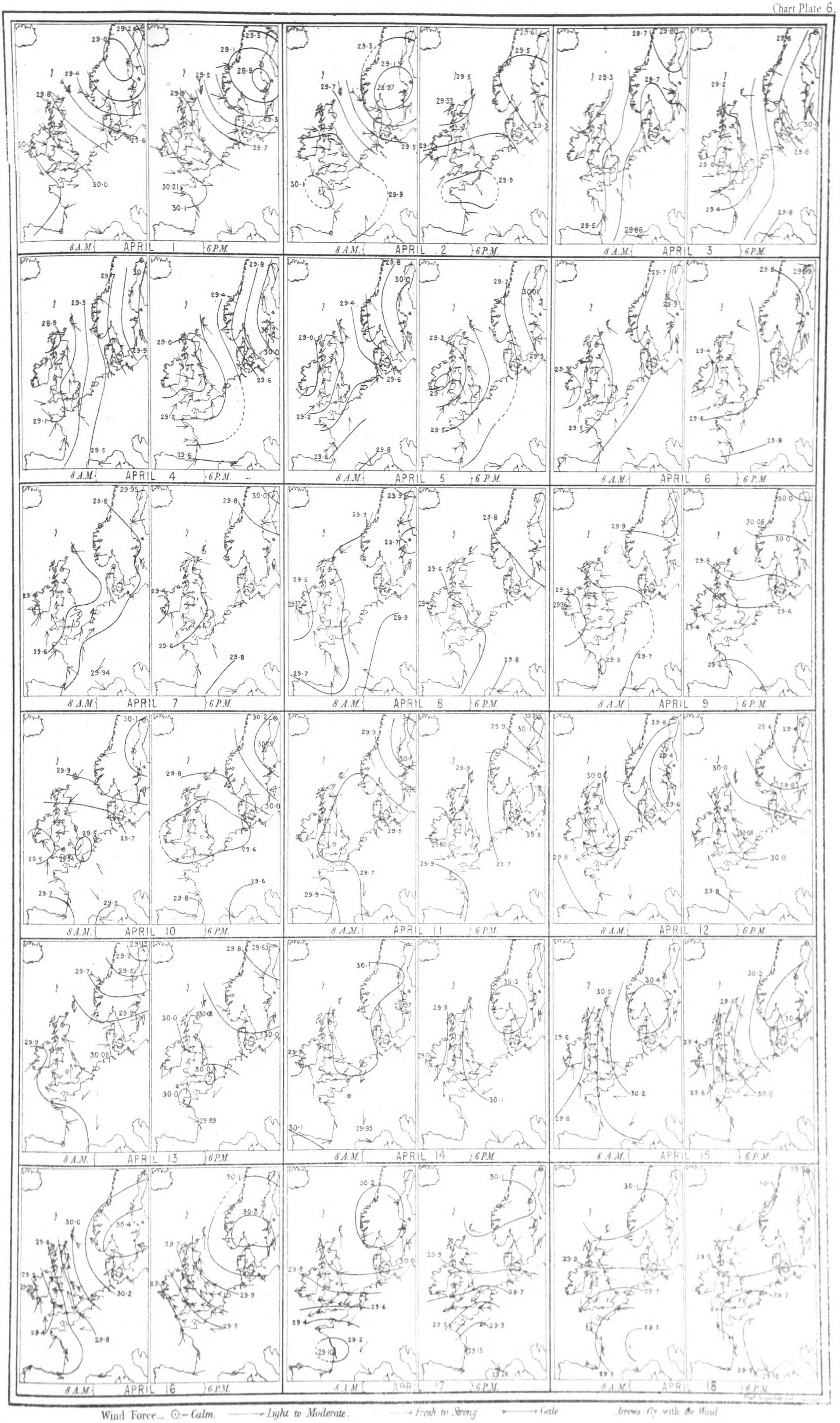
8 A.M. MARCH 19 6 P.M.
8 A.M. MARCH 20 6 P.M.
8 A.M. MARCH 21 6 P.M.
8 A.M. MARCH 22 6 P.M.
8 A.M. MARCH 23 6 P.M.
8 A.M. MARCH 24 6 P.M.
8 A.M. MARCH 25 6 P.M.
8 A.M. MARCH 26 6 P.M.
8 A.M. MARCH 27 6 P.M.
8 A.M. MARCH 28 6 P.M.
8 A.M. MARCH 29 6 P.M.
8 A.M. MARCH 30 6 P.M.
8 A.M. MARCH 31 6 P.M.

Wind Force... ⊙ — Calm. ——→ Light to Moderate. ——→ Fresh to Strong ——→ Gale Arrows fly with the Wind

APRIL, 1877.

Chart Plate 6.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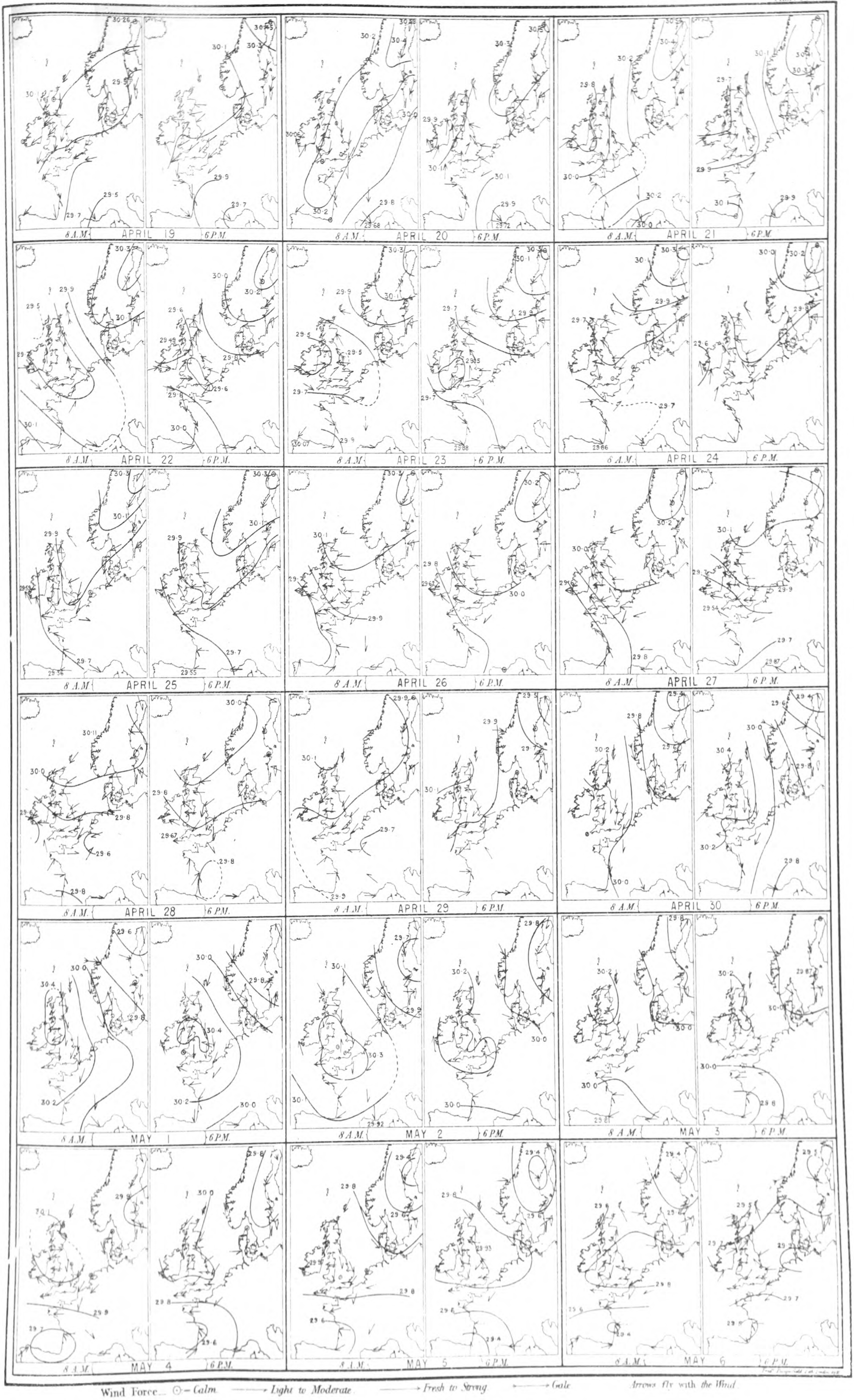
8 A.M. APRIL 9 6 P.M.
8 A.M. APRIL 10 6 P.M.
8 A.M. APRIL 11 6 P.M.
8 A.M. APRIL 12 6 P.M.
8 A.M. APRIL 13 6 P.M.
8 A.M. APRIL 14 6 P.M.
8 A.M. APRIL 15 6 P.M.
8 A.M. APRIL 16 6 P.M.
8 A.M. APRIL 17 6 P.M.
8 A.M. APRIL 18 6 P.M.

Wind Force _ ⊙ - Calm. → Light to Moderate. → Fresh to Strong → Gale. Arrows fly with the Wind.

APRIL & MAY, 1877.

Chart Plate. 7.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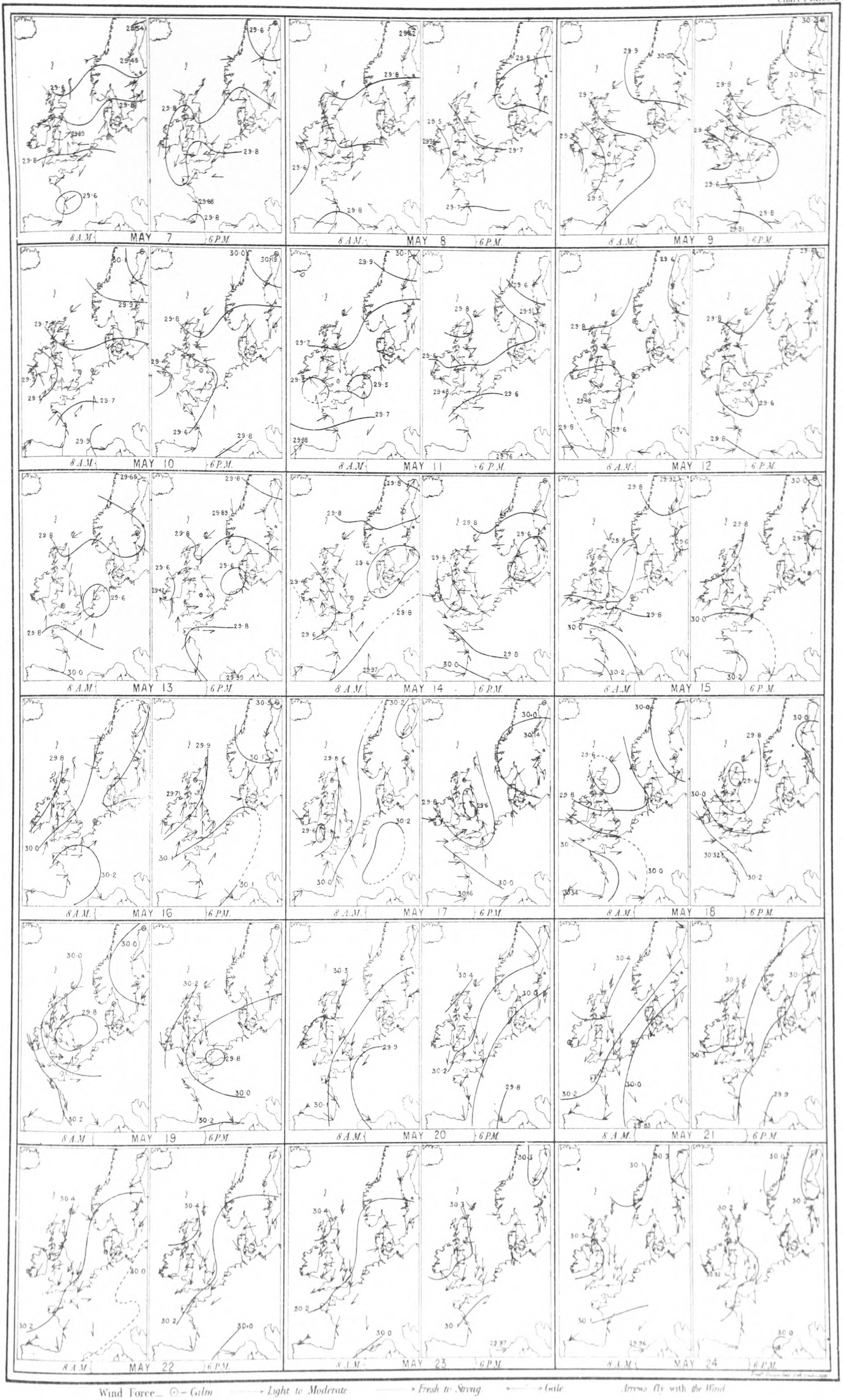
8 A.M. APRIL 23 6 P.M.
8 A.M. APRIL 24 6 P.M.
8 A.M. APRIL 25 6 P.M.
8 A.M. APRIL 26 6 P.M.
8 A.M. APRIL 27 6 P.M.
8 A.M. APRIL 28 6 P.M.
8 A.M. APRIL 29 6 P.M.
8 A.M. APRIL 30 6 P.M.
8 A.M. MAY 1 6 P.M.
8 A.M. MAY 2 6 P.M.
8 A.M. MAY 3 6 P.M.
8 A.M. MAY 4 6 P.M.
8 A.M. MAY 5 6 P.M.
8 A.M. MAY 6 6 P.M.

Wind Force... ⊙ – *Calm* ⟶ *Light to Moderate* ⟶ *Fresh to Strong* ⟶ *Gale* *Arrows fly with the Wind*

MAY, 1877.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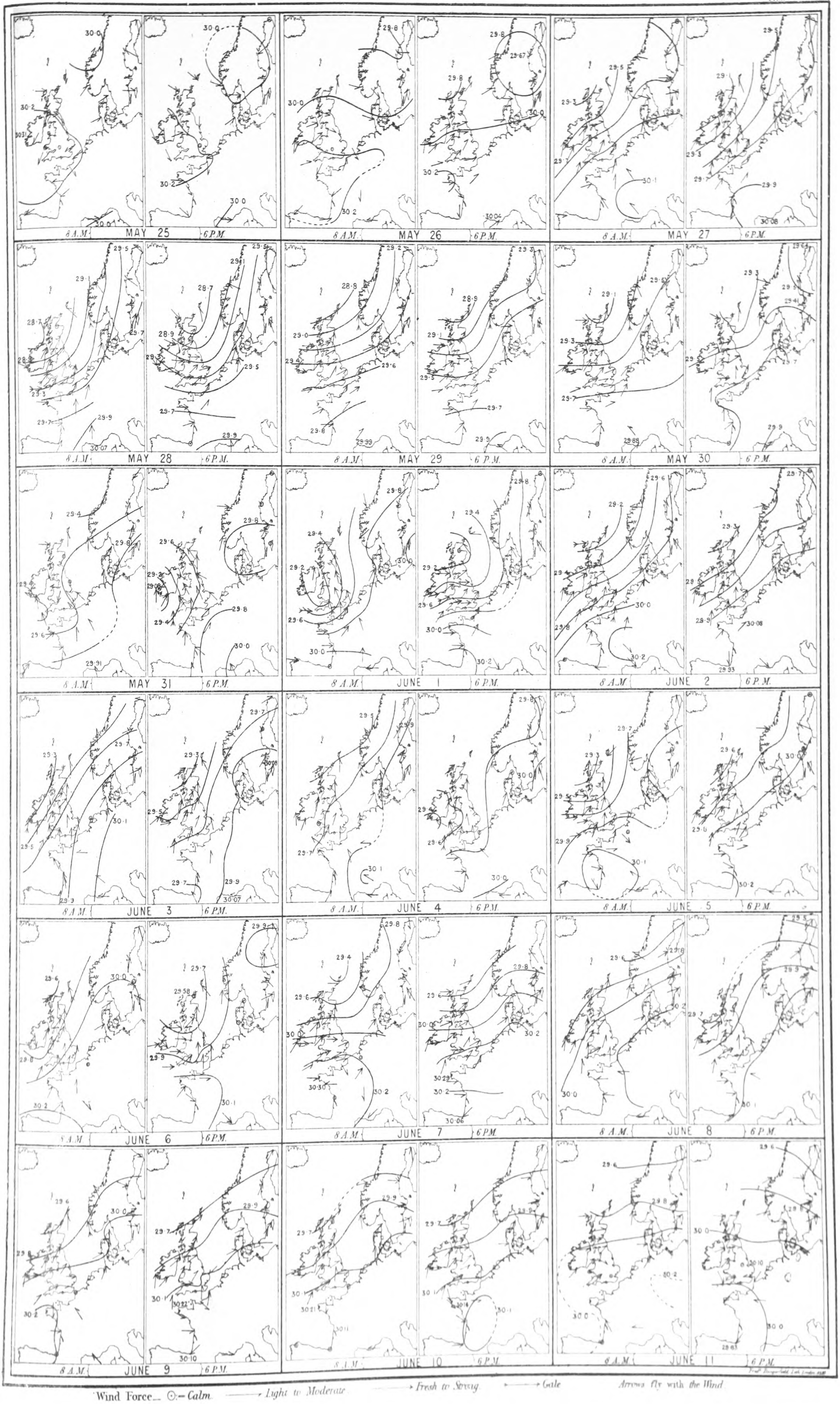
8 A.M. MAY 16 6 P.M.
8 A.M. MAY 17 6 P.M.
8 A.M. MAY 18 6 P.M.
8 A.M. MAY 19 6 P.M.
8 A.M. MAY 20 6 P.M.
8 A.M. MAY 21 6 P.M.
8 A.M. MAY 22 6 P.M.
8 A.M. MAY 23 6 P.M.
8 A.M. MAY 24 6 P.M.

Wind Force _ ⊙ - *Calm* ——→ *Light to Moderate* ——→ *Fresh to Strong* ——→ *Gale* *Arrows fly with the Wind*

MAY & JUNE, 1877.

Chart Plate 9.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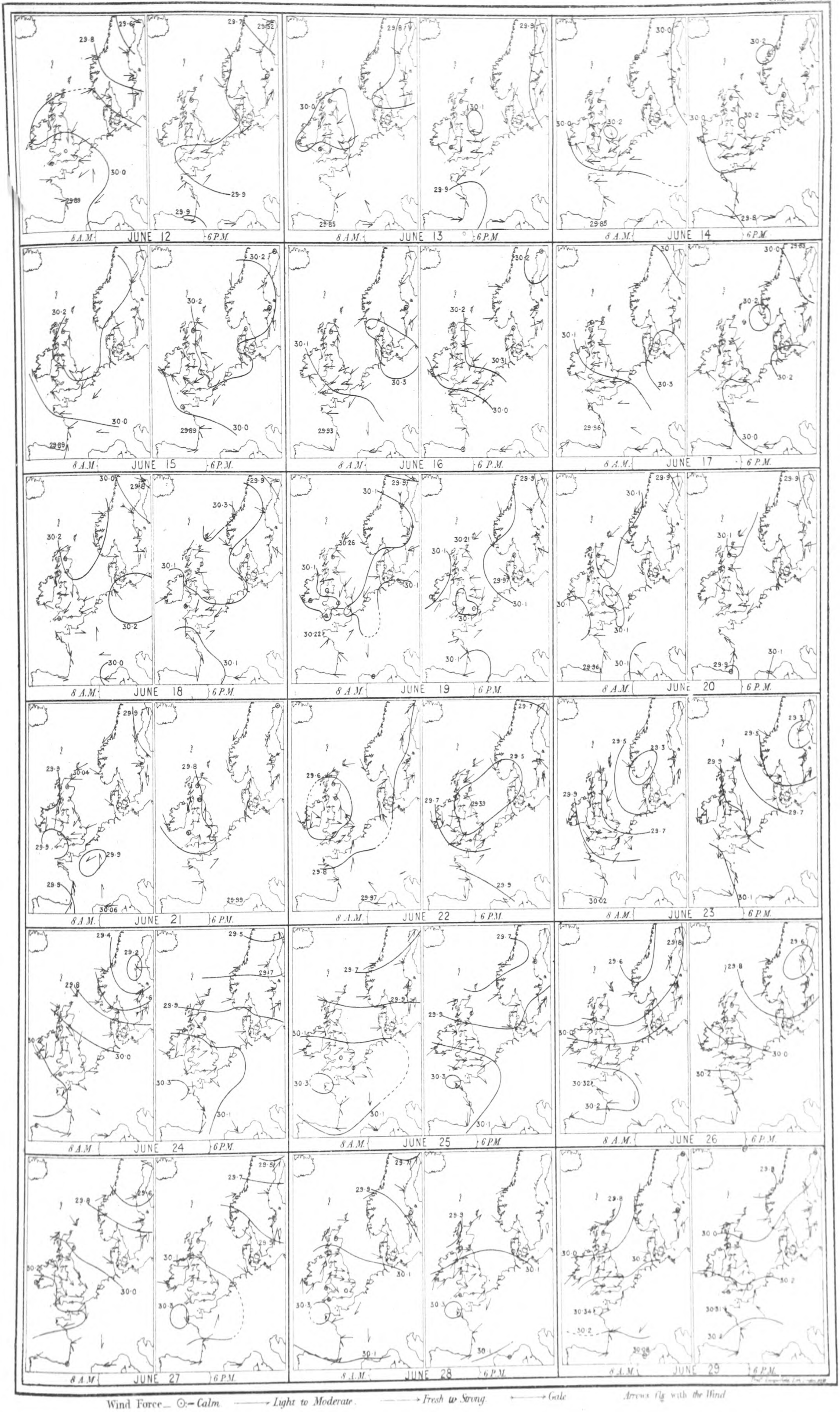
8 A.M. MAY 30 6 P.M.
8 A.M. MAY 31 6 P.M.
8 A.M. JUNE 1 6 P.M.
8 A.M. JUNE 2 6 P.M.
8 A.M. JUNE 3 6 P.M.
8 A.M. JUNE 4 6 P.M.
8 A.M. JUNE 5 6 P.M.
8 A.M. JUNE 6 6 P.M.
8 A.M. JUNE 7 6 P.M.
8 A.M. JUNE 8 6 P.M.
8 A.M. JUNE 9 6 P.M.
8 A.M. JUNE 10 6 P.M.
8 A.M. JUNE 11 6 P.M.

Wind Force— ⊙ = Calm → Light to Moderate → Fresh to Strong → Gale Arrows fly with the Wind

JUNE, 1877.

Chart Plate 10.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29·6
29·8
30·0
29·89
29·7
29·52
29·9
29·9
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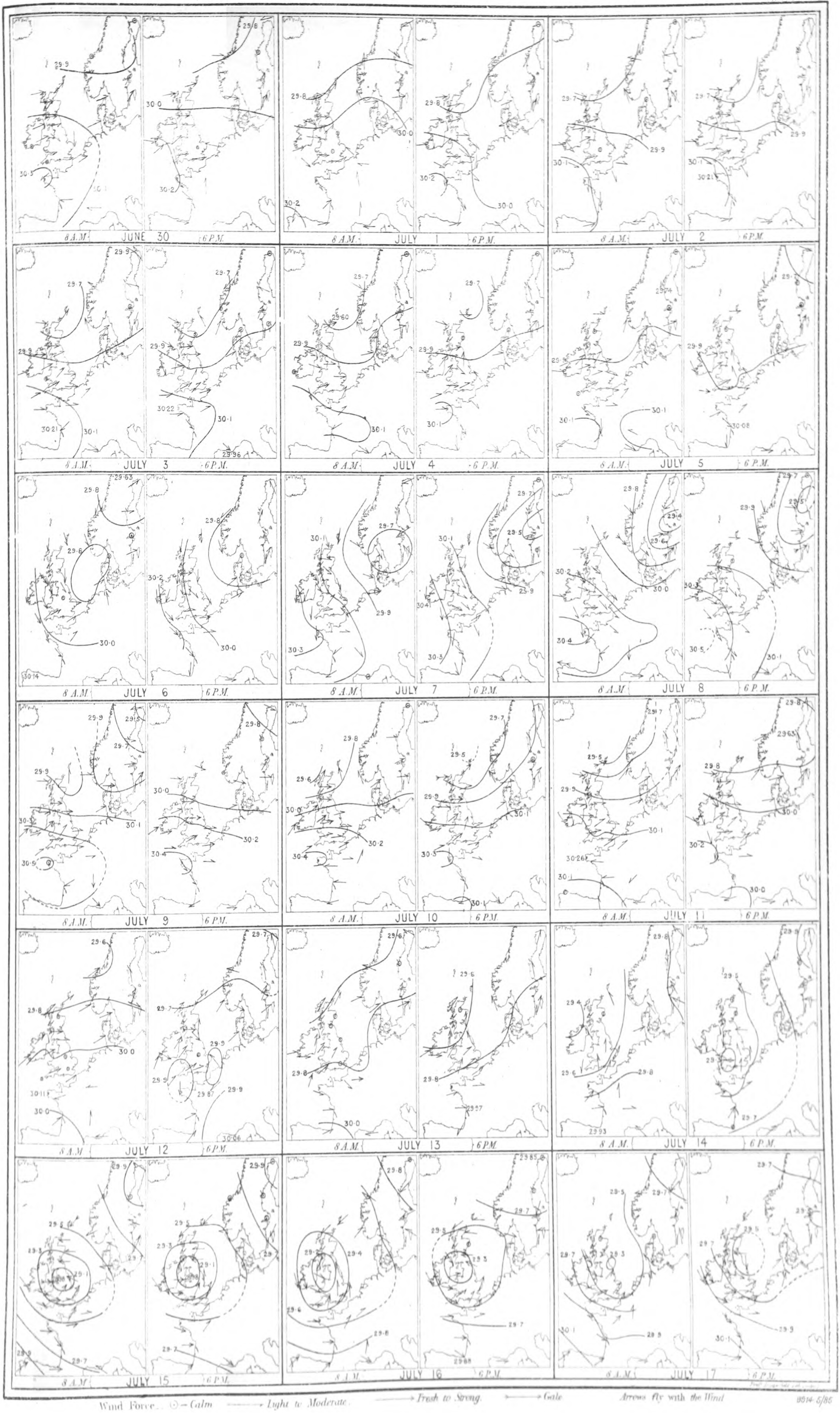
29·8
30·0
29·85
29·9
30·1
29·9
8 A.M. JUNE 14 6 P.M.
30·0
30·0
30·2
29·85
30·2
30·0
30·2
29·8
8 A.M. JUNE 15 6 P.M.
30·2
30·0
29·89
30·2
30·2
29·89
30·0
8 A.M. JUNE 16 6 P.M.
30·1
30·3
29·93
30·2
30·2
30·31
30·0
8 A.M. JUNE 17 6 P.M.
30·1
30·1
30·3
29·96
30·0
29·83
30·2
30·2
30·0
8 A.M. JUNE 18 6 P.M.
30·0
29·8
30·2
30·2
30·0
29·9
30·3
30·1
30·1
8 A.M. JUNE 19 6 P.M.
29·97
30·1
30·26
30·1
30·1
30·22
29·9
30·21
30·1
29·97
30·1
30·1
30·1
8 A.M. JUNE 20 6 P.M.
29·9
30·1
30·1
30·1
30·1
29·96
29·9
30·1
29·9
30·1
8 A.M. JUNE 21 6 P.M.
29·9
29·9
30·04
29·9
29·9
29·9
30·06
29·8
29·99
8 A.M. JUNE 22 6 P.M.
29·6
29·8
29·97
29·7
29·5
29·7
29·39
29·9
8 A.M. JUNE 23 6 P.M.
29·5
29·3
29·9
29·7
30·02
29·5
29·3
29·9
29·7
30·1
8 A.M. JUNE 24 6 P.M.
29·4
29·2
29·8
30·2
30·0
29·5
29·7
29·9
30·3
30·1
8 A.M. JUNE 25 6 P.M.
29·7
29·9
30·1
30·3
30·1
29·7
29·9
30·3
30·1
8 A.M. JUNE 26 6 P.M.
29·8
29·6
30·0
30·32
30·2
29·6
29·8
30·0
30·2
8 A.M. JUNE 27 6 P.M.
29·8
29·6
30·2
30·0
29·7
29·51
29·9
30·1
30·3
8 A.M. JUNE 28 6 P.M.
29·7
29·9
30·1
30·3
30·1
29·9
30·1
30·3
30·1
8 A.M. JUNE 29 6 P.M.
29·8
30·0
30·2
30·34
30·2
30·06
29·8
30·0
30·2
30·31
30·2
Wind Force — ⊙ — Calm
→ Light to Moderate
→ Fresh to Strong
→ Gale
Arrows fly with the Wind

JUNE & JULY, 1877.

Chart Plate 11

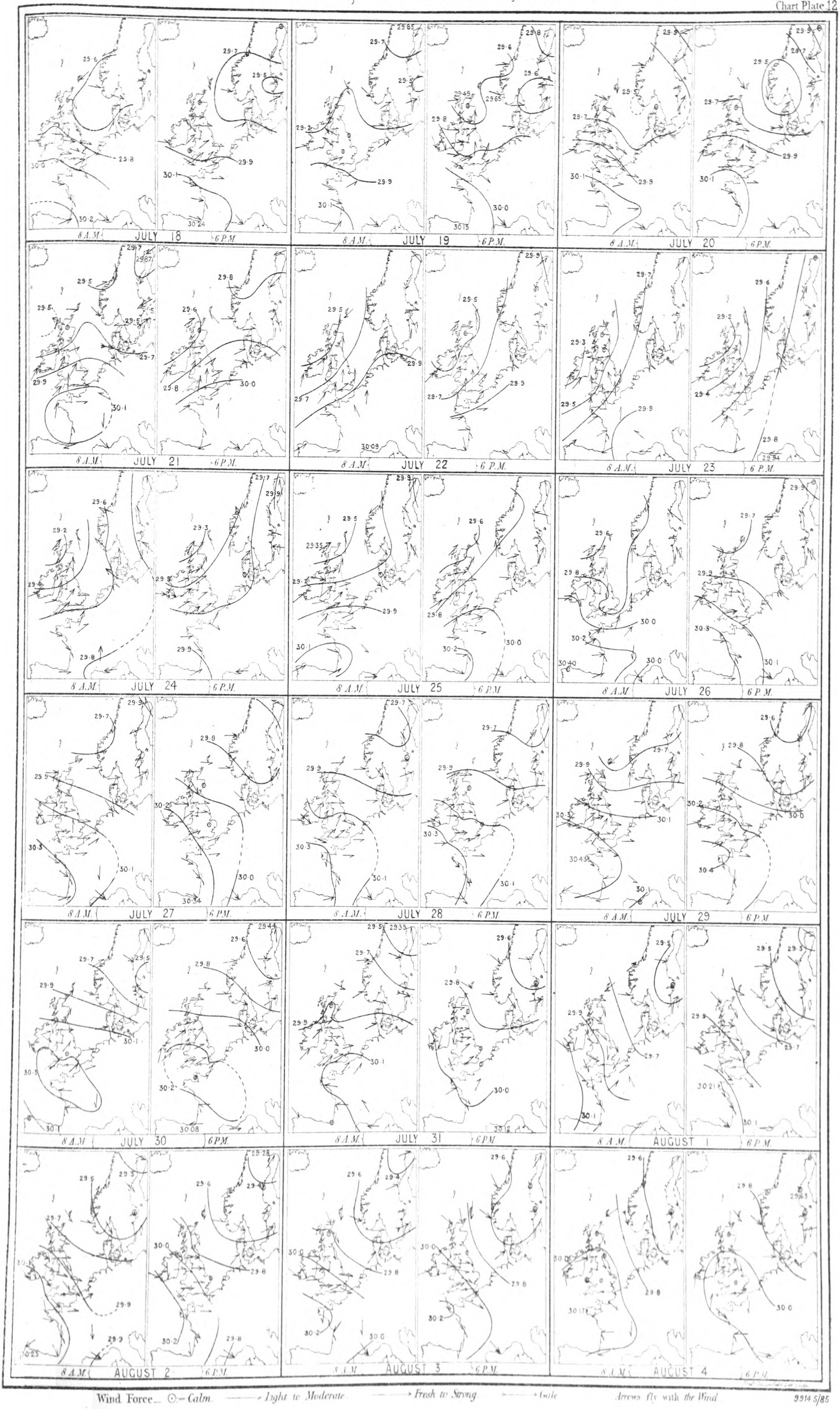

8 A.M. JUNE 30 6 P.M.
8 A.M. JULY 1 6 P.M.
8 A.M. JULY 2 6 P.M.
8 A.M. JULY 3 6 P.M.
8 A.M. JULY 4 6 P.M.
8 A.M. JULY 5 6 P.M.
8 A.M. JULY 6 6 P.M.
8 A.M. JULY 7 6 P.M.
8 A.M. JULY 8 6 P.M.
8 A.M. JULY 9 6 P.M.
8 A.M. JULY 10 6 P.M.
8 A.M. JULY 11 6 P.M.
8 A.M. JULY 12 6 P.M.
8 A.M. JULY 13 6 P.M.
8 A.M. JULY 14 6 P.M.
8 A.M. JULY 15 6 P.M.
8 A.M. JULY 16 6 P.M.
8 A.M. JULY 17 6 P.M.

Wind Force. ⊙ – Calm ——→ Light to Moderate. ——→ Fresh to Strong. ——→ Gale. Arrows fly with the Wind

8814-5/85

JULY & AUGUST, 1877.

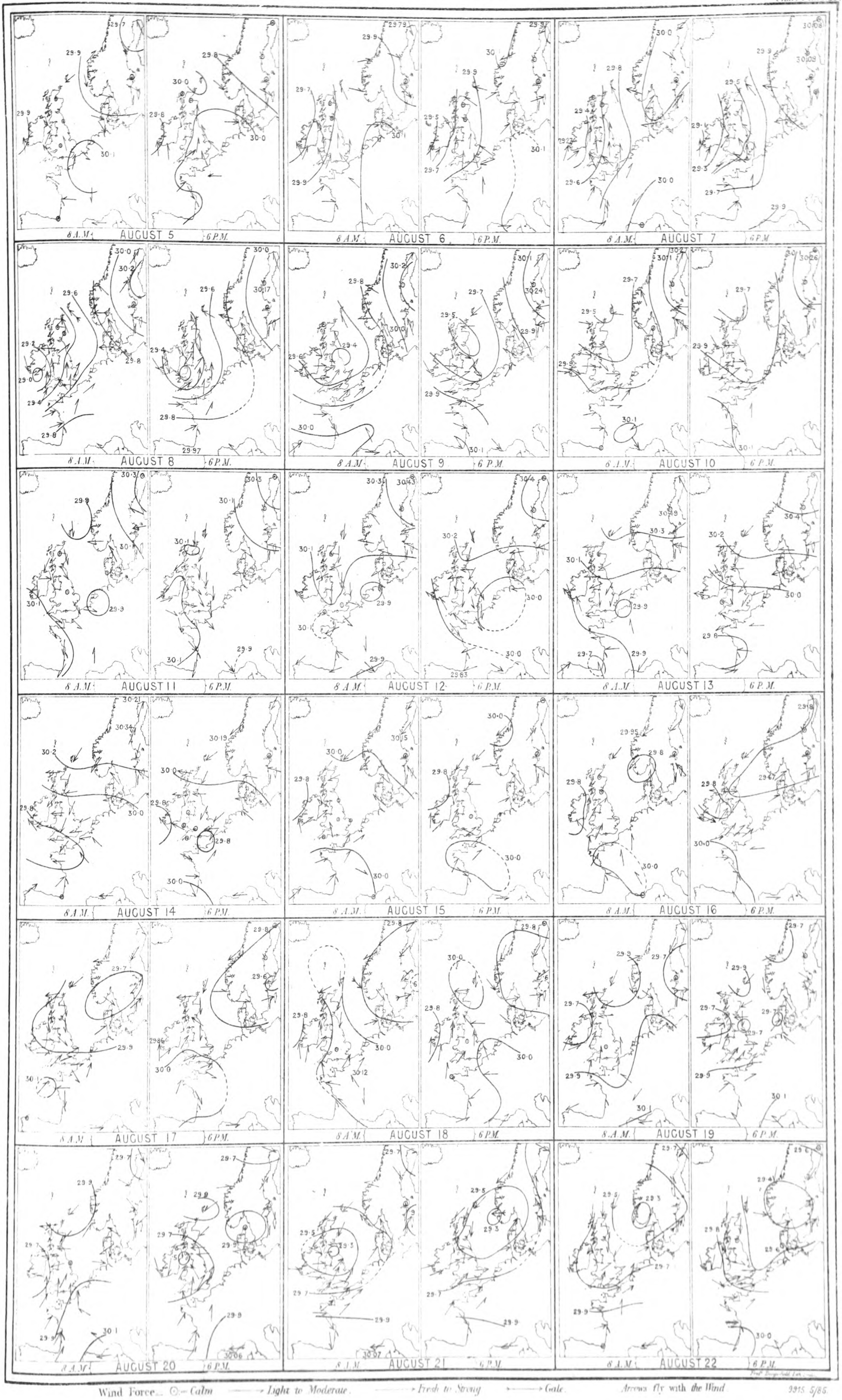
Chart Plate 12


8 A.M. JULY 18 6 P.M.
8 A.M. JULY 19 6 P.M.
8 A.M. JULY 20 6 P.M.
8 A.M. JULY 21 6 P.M.
8 A.M. JULY 22 6 P.M.
8 A.M. JULY 23 6 P.M.
8 A.M. JULY 24 6 P.M.
8 A.M. JULY 25 6 P.M.
8 A.M. JULY 26 6 P.M.
8 A.M. JULY 27 6 P.M.
8 A.M. JULY 28 6 P.M.
8 A.M. JULY 29 6 P.M.
8 A.M. JULY 30 6 P.M.
8 A.M. JULY 31 6 P.M.
8 A.M. AUGUST 1 6 P.M.
8 A.M. AUGUST 2 6 P.M.
8 A.M. AUGUST 3 6 P.M.
8 A.M. AUGUST 4 6 P.M.

Wind Force _ ⊙ = Calm —— Light to Moderate —— Fresh to Strong —— Gale Arrows fly with the Wind

9914.5/85

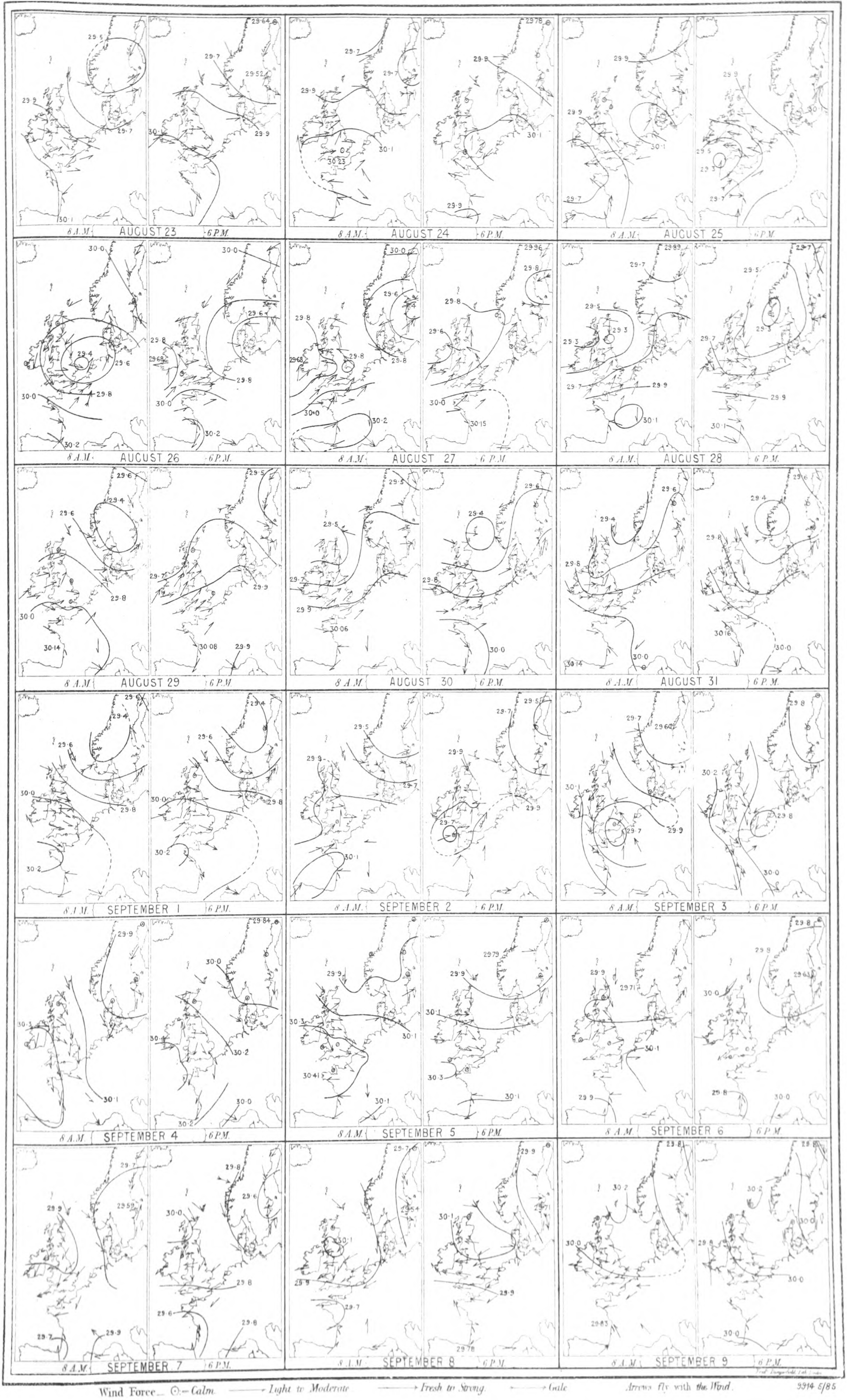
AUGUST, 1877.


8 A.M.
AUGUST 5
6 P.M.
8 A.M.
AUGUST 6
6 P.M.
8 A.M.
AUGUST 7
6 P.M.
8 A.M.
AUGUST 8
6 P.M.
8 A.M.
AUGUST 9
6 P.M.
8 A.M.
AUGUST 10
6 P.M.
8 A.M.
AUGUST 11
6 P.M.
8 A.M.
AUGUST 12
6 P.M.
8 A.M.
AUGUST 13
6 P.M.
8 A.M.
AUGUST 14
6 P.M.
8 A.M.
AUGUST 15
6 P.M.
8 A.M.
AUGUST 16
6 P.M.
8 A.M.
AUGUST 17
6 P.M.
8 A.M.
AUGUST 18
6 P.M.
8 A.M.
AUGUST 19
6 P.M.
8 A.M.
AUGUST 20
6 P.M.
8 A.M.
AUGUST 21
6 P.M.
8 A.M.
AUGUST 22
6 P.M.

Wind Force... ⊙ = Calm ——→ Light to Moderate. ——→ Fresh to Strong ——→ Gale. Arrows fly with the Wind. 9915 5/86.

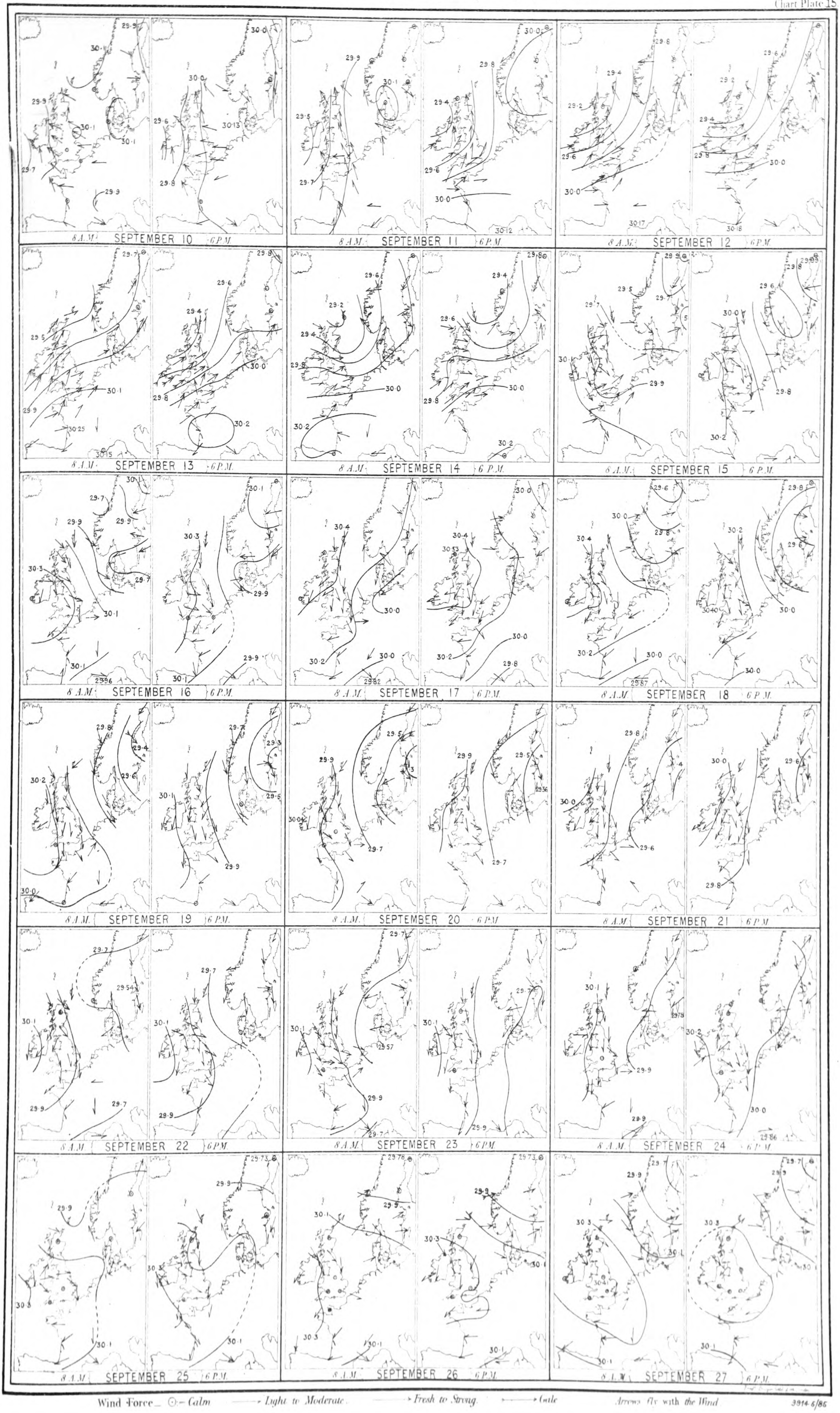
AUGUST & SEPTEMBER, 1877.

Chart Plate 14


8 A.M.
AUGUST 23
6 P.M.
8 A.M.
AUGUST 24
6 P.M.
8 A.M.
AUGUST 25
6 P.M.
8 A.M.
AUGUST 26
6 P.M.
8 A.M.
AUGUST 27
6 P.M.
8 A.M.
AUGUST 28
6 P.M.
8 A.M.
AUGUST 29
6 P.M.
8 A.M.
AUGUST 30
6 P.M.
8 A.M.
AUGUST 31
6 P.M.
8 A.M.
SEPTEMBER 1
6 P.M.
8 A.M.
SEPTEMBER 2
6 P.M.
8 A.M.
SEPTEMBER 3
6 P.M.
8 A.M.
SEPTEMBER 4
6 P.M.
8 A.M.
SEPTEMBER 5
6 P.M.
8 A.M.
SEPTEMBER 6
6 P.M.
8 A.M.
SEPTEMBER 7
6 P.M.
8 A.M.
SEPTEMBER 8
6 P.M.
8 A.M.
SEPTEMBER 9
6 P.M.

Wind Force _ ⊙ = *Calm* ——→ *Light to Moderate* ——→ *Fresh to Strong* ——→ *Gale* *Arrows fly with the Wind.* 9914 5/85

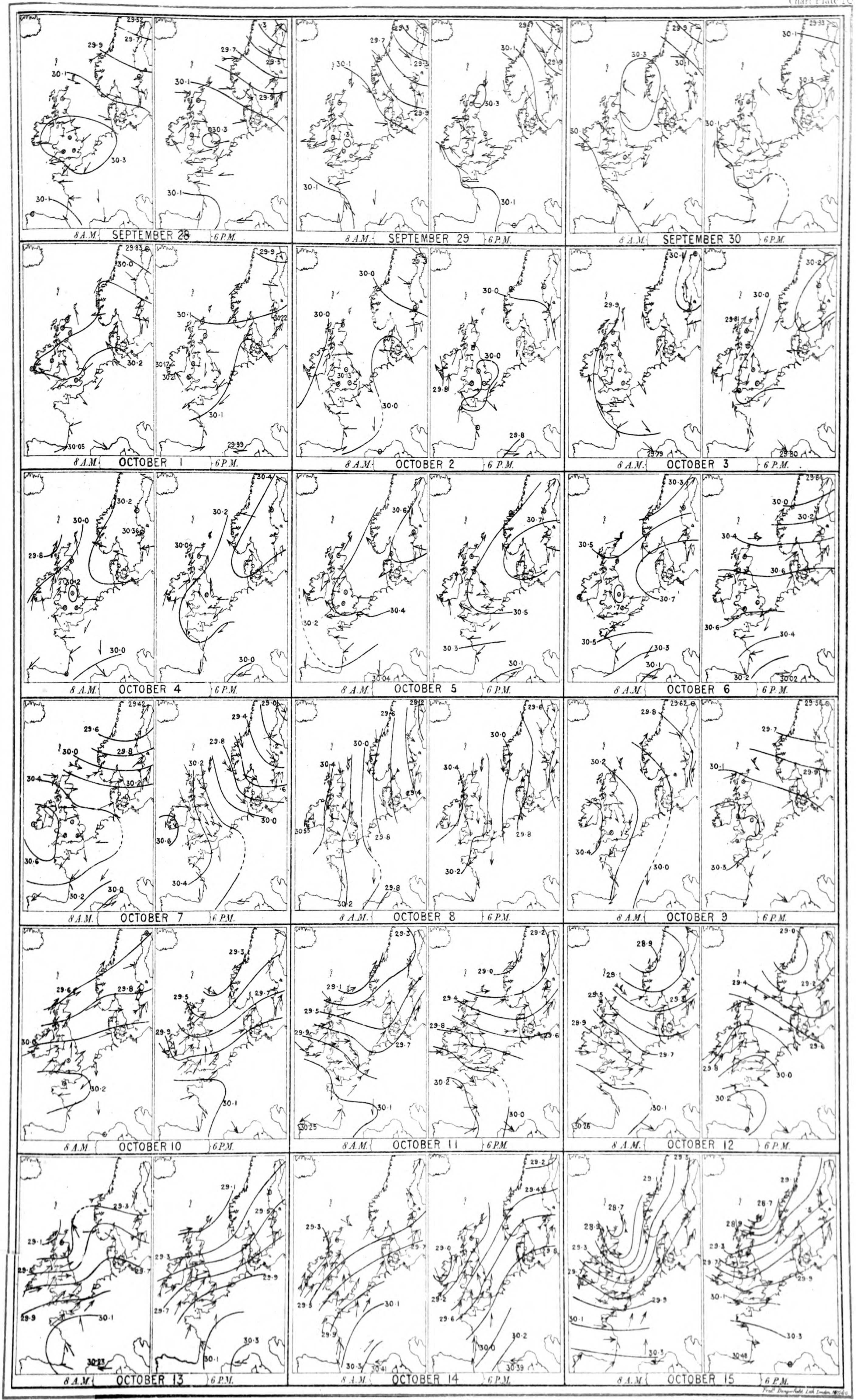
SEPTEMBER, 1877.


8 A.M. SEPTEMBER 10 6 P.M.
8 A.M. SEPTEMBER 11 6 P.M.
8 A.M. SEPTEMBER 12 6 P.M.
8 A.M. SEPTEMBER 13 6 P.M.
8 A.M. SEPTEMBER 14 6 P.M.
8 A.M. SEPTEMBER 15 6 P.M.
8 A.M. SEPTEMBER 16 6 P.M.
8 A.M. SEPTEMBER 17 6 P.M.
8 A.M. SEPTEMBER 18 6 P.M.
8 A.M. SEPTEMBER 19 6 P.M.
8 A.M. SEPTEMBER 20 6 P.M.
8 A.M. SEPTEMBER 21 6 P.M.
8 A.M. SEPTEMBER 22 6 P.M.
8 A.M. SEPTEMBER 23 6 P.M.
8 A.M. SEPTEMBER 24 6 P.M.
8 A.M. SEPTEMBER 25 6 P.M.
8 A.M. SEPTEMBER 26 6 P.M.
8 A.M. SEPTEMBER 27 6 P.M.

Wind Force _ ⊙ - *Calm* ⟶ *Light to Moderate* ⟶ *Fresh to Strong* ⟶ *Gale* *Arrows fly with the Wind*

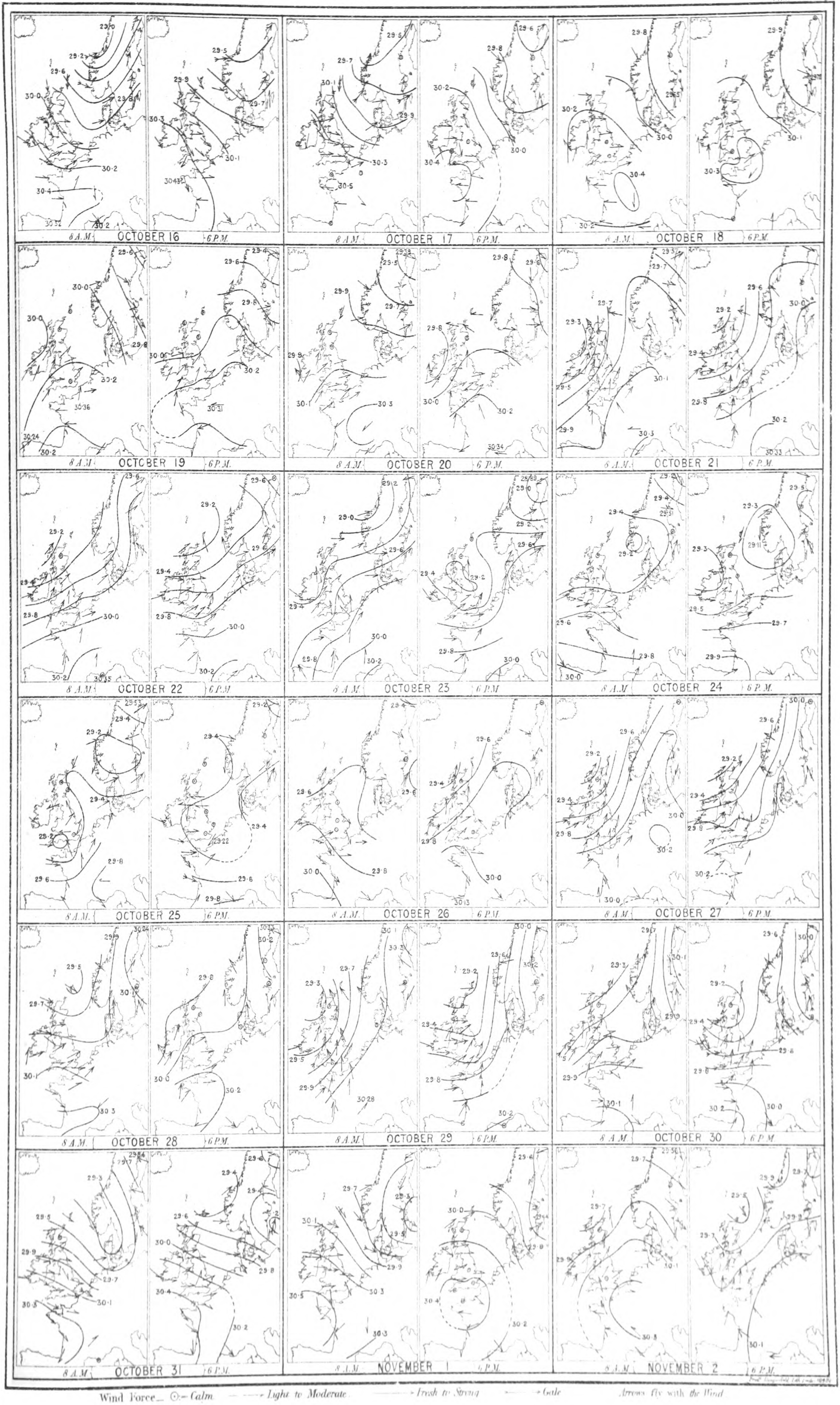
SEPTEMBER & OCTOBER, 1877.

Chart Plate 16


8 A.M. SEPTEMBER 28 6 P.M.
8 A.M. SEPTEMBER 29 6 P.M.
8 A.M. SEPTEMBER 30 6 P.M.
8 A.M. OCTOBER 1 6 P.M.
8 A.M. OCTOBER 2 6 P.M.
8 A.M. OCTOBER 3 6 P.M.
8 A.M. OCTOBER 4 6 P.M.
8 A.M. OCTOBER 5 6 P.M.
8 A.M. OCTOBER 6 6 P.M.
8 A.M. OCTOBER 7 6 P.M.
8 A.M. OCTOBER 8 6 P.M.
8 A.M. OCTOBER 9 6 P.M.
8 A.M. OCTOBER 10 6 P.M.
8 A.M. OCTOBER 11 6 P.M.
8 A.M. OCTOBER 12 6 P.M.
8 A.M. OCTOBER 13 6 P.M.
8 A.M. OCTOBER 14 6 P.M.
8 A.M. OCTOBER 15 6 P.M.

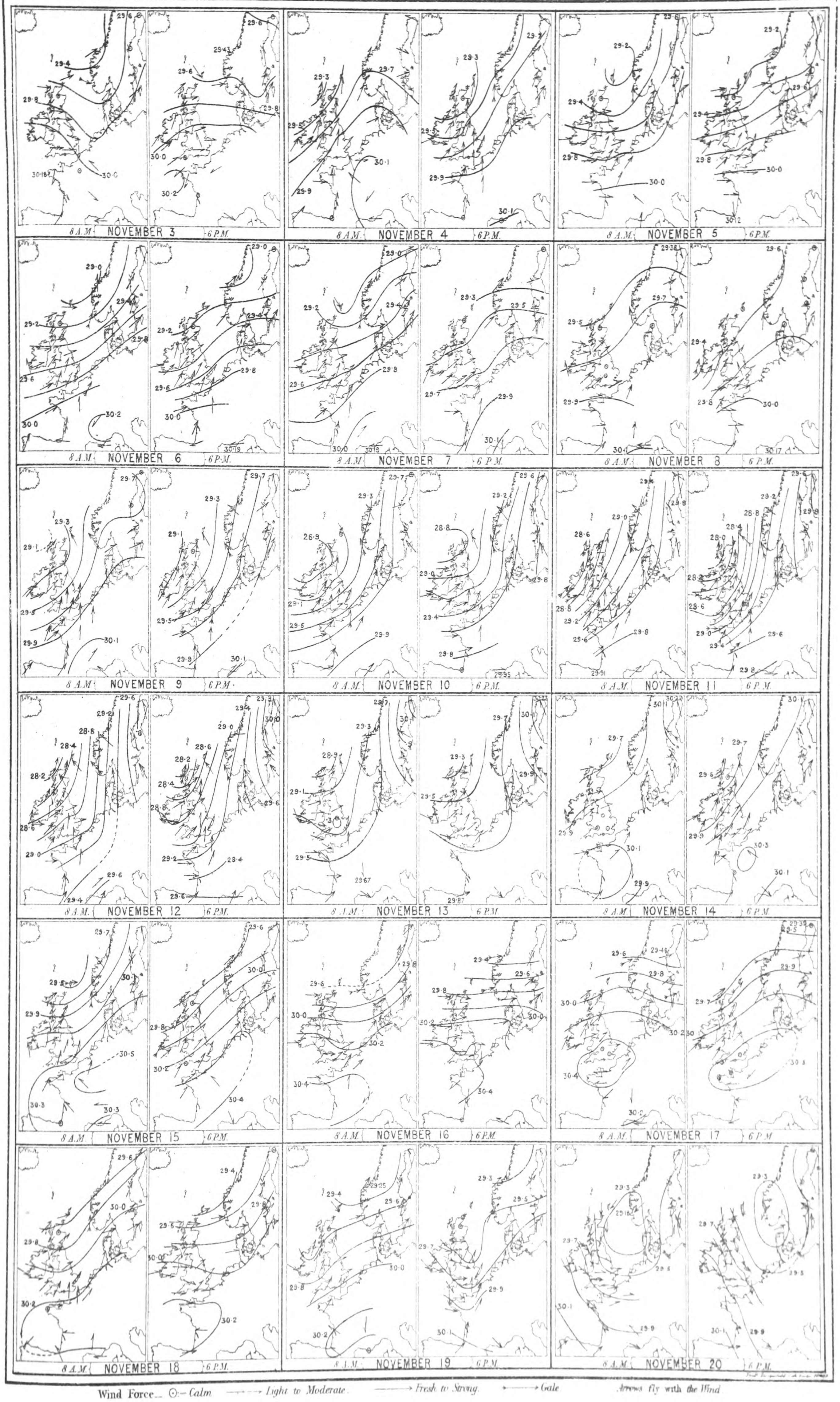
Wind Force — ⊙ = *Calm* ⟶ *Light to Moderate* ⟶ *Fresh to Strong* ⟶ *Gale.* *Arrows fly with the Wind.*

OCTOBER & NOVEMBER, 1877.


8 A.M. OCTOBER 16 6 P.M.
8 A.M. OCTOBER 17 6 P.M.
8 A.M. OCTOBER 18 6 P.M.
8 A.M. OCTOBER 19 6 P.M.
8 A.M. OCTOBER 20 6 P.M.
8 A.M. OCTOBER 21 6 P.M.
8 A.M. OCTOBER 22 6 P.M.
8 A.M. OCTOBER 23 6 P.M.
8 A.M. OCTOBER 24 6 P.M.
8 A.M. OCTOBER 25 6 P.M.
8 A.M. OCTOBER 26 6 P.M.
8 A.M. OCTOBER 27 6 P.M.
8 A.M. OCTOBER 28 6 P.M.
8 A.M. OCTOBER 29 6 P.M.
8 A.M. OCTOBER 30 6 P.M.
8 A.M. OCTOBER 31 6 P.M.
8 A.M. NOVEMBER 1 6 P.M.
8 A.M. NOVEMBER 2 6 P.M.

Wind Force — ⊙ — Calm. ——→ Light to Moderate. ——→ Fresh to Strong. ——→ Gale. Arrows fly with the Wind.

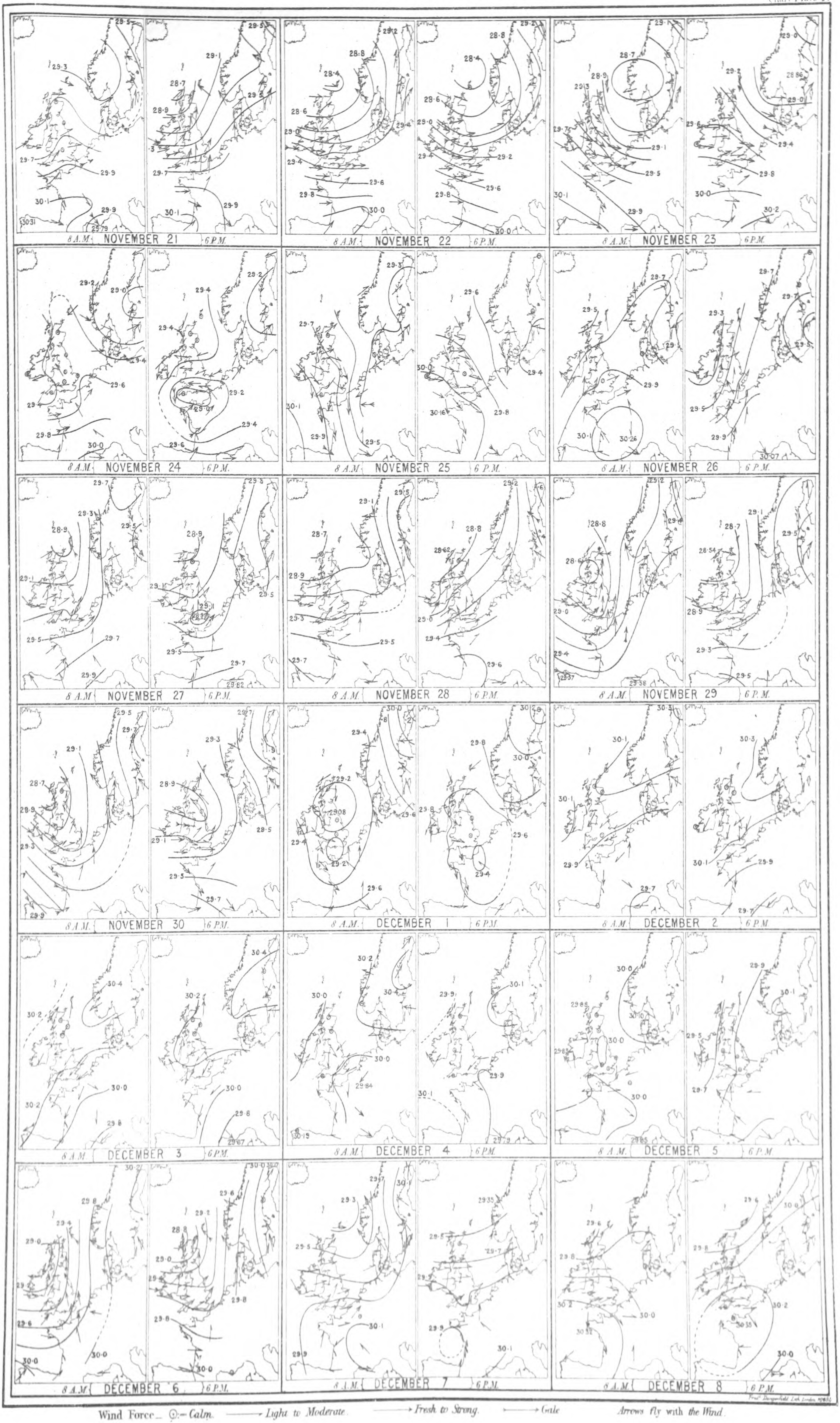
NOVEMBER, 1877.


8 A.M. NOVEMBER 3 6 P.M.
8 A.M. NOVEMBER 4 6 P.M.
8 A.M. NOVEMBER 5 6 P.M.
8 A.M. NOVEMBER 6 6 P.M.
8 A.M. NOVEMBER 7 6 P.M.
8 A.M. NOVEMBER 8 6 P.M.
8 A.M. NOVEMBER 9 6 P.M.
8 A.M. NOVEMBER 10 6 P.M.
8 A.M. NOVEMBER 11 6 P.M.
8 A.M. NOVEMBER 12 6 P.M.
8 A.M. NOVEMBER 13 6 P.M.
8 A.M. NOVEMBER 14 6 P.M.
8 A.M. NOVEMBER 15 6 P.M.
8 A.M. NOVEMBER 16 6 P.M.
8 A.M. NOVEMBER 17 6 P.M.
8 A.M. NOVEMBER 18 6 P.M.
8 A.M. NOVEMBER 19 6 P.M.
8 A.M. NOVEMBER 20 6 P.M.

Wind Force— ⊙ — *Calm* ——→ *Light to Moderate.* ——→ *Fresh to Strong.* ——→ *Gale* *Arrows fly with the Wind*

NOVEMBER & DECEMBER, 1877.

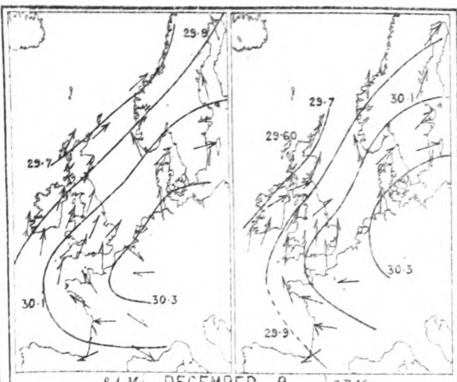
Chart Plate 19


8 A.M. NOVEMBER 21 6 P.M.
8 A.M. NOVEMBER 22 6 P.M.
8 A.M. NOVEMBER 23 6 P.M.
8 A.M. NOVEMBER 24 6 P.M.
8 A.M. NOVEMBER 25 6 P.M.
8 A.M. NOVEMBER 26 6 P.M.
8 A.M. NOVEMBER 27 6 P.M.
8 A.M. NOVEMBER 28 6 P.M.
8 A.M. NOVEMBER 29 6 P.M.
8 A.M. NOVEMBER 30 6 P.M.
8 A.M. DECEMBER 1 6 P.M.
8 A.M. DECEMBER 2 6 P.M.
8 A.M. DECEMBER 3 6 P.M.
8 A.M. DECEMBER 4 6 P.M.
8 A.M. DECEMBER 5 6 P.M.
8 A.M. DECEMBER 6 6 P.M.
8 A.M. DECEMBER 7 6 P.M.
8 A.M. DECEMBER 8 6 P.M.

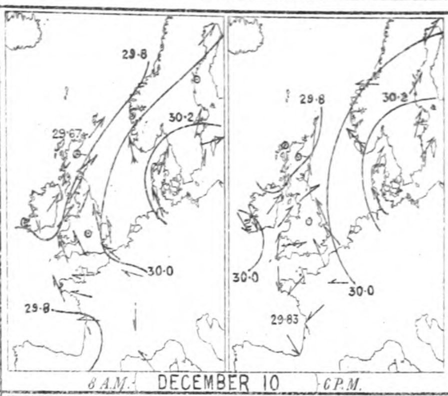
Wind Force — ⊙ — Calm. ⟶ Light to Moderate. ⟶ Fresh to Strong. ⟶ Gale. Arrows fly with the Wind.

DECEMBER, 1877.

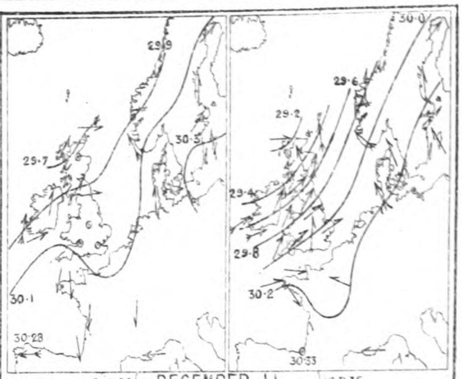
Chart Plate 20.


29·9
29·7
30·1
30·3
29·7
29·60
30·1
30·3
29·9

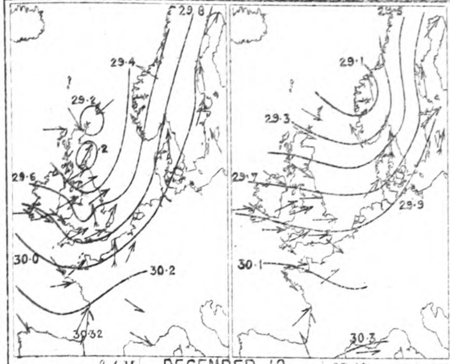
8 A.M. DECEMBER 9 *6 P.M.*


29·8
29·67
30·2
30·0
29·8
29·8
30·2
30·0
30·0
29·83

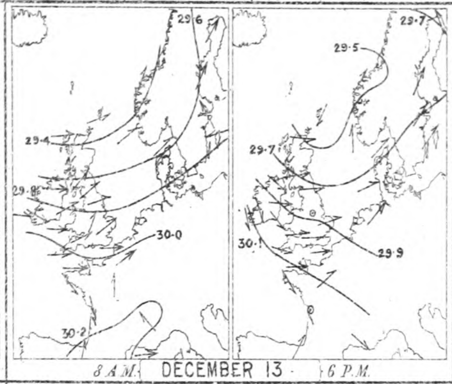
8 A.M. DECEMBER 10 *6 P.M.*


29·9
29·7
30·5
30·1
30·28
30·0
29·6
29·2
29·4
29·8
30·2
30·33

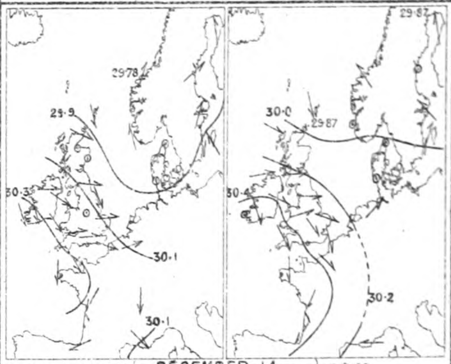
8 A.M. DECEMBER 11 *6 P.M.*


29·8
29·4
29·2
29·6
30·0
30·2
30·32
29·5
29·1
29·3
29·7
29·9
30·1
30·3

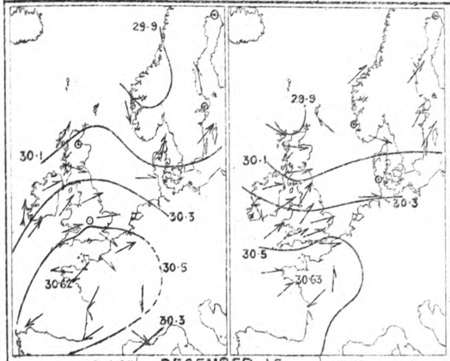
8 A.M. DECEMBER 12 *6 P.M.*


29·6
29·4
29·8
30·0
30·2
29·7
29·5
29·7
30·1
29·9

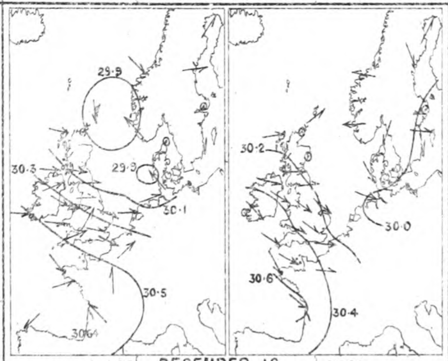
8 A.M. DECEMBER 13 *6 P.M.*


29·78
29·9
30·3
30·1
30·1
29·82
30·0
29·87
30·4
30·2

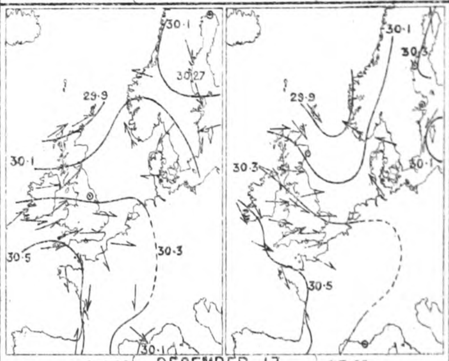
8 A.M. DECEMBER 14 *6 P.M.*


29·9
30·1
30·3
30·5
30·62
30·3
29·9
30·1
30·3
30·5
30·63

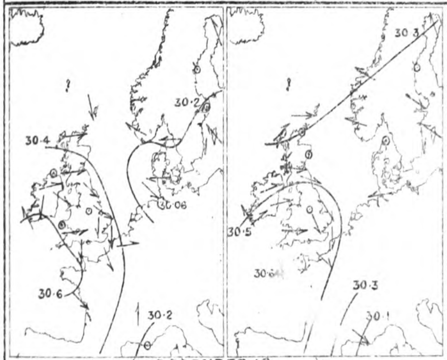
8 A.M. DECEMBER 15 *6 P.M.*


29·9
30·3
29·8
30·1
30·5
30·64
30·2
30·0
30·6
30·4

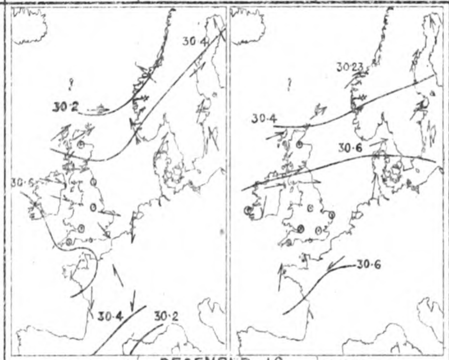
8 A.M. DECEMBER 16 *6 P.M.*


30·1
30·27
29·9
30·1
30·5
30·3
30·1
30·1
30·3
29·9
30·3
30·1
30·5

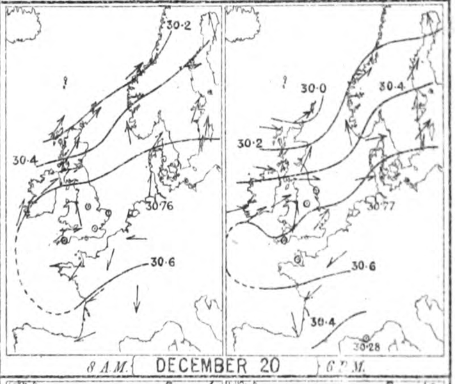
8 A.M. DECEMBER 17 *6 P.M.*


30·2
30·4
30·06
30·6
30·2
30·3
30·5
30·64
30·3
30·1

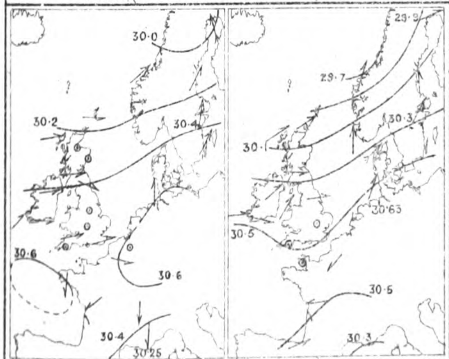
8 A.M. DECEMBER 18 *6 P.M.*


30·4
30·2
30·6
30·4
30·2
30·23
30·4
30·6
30·6

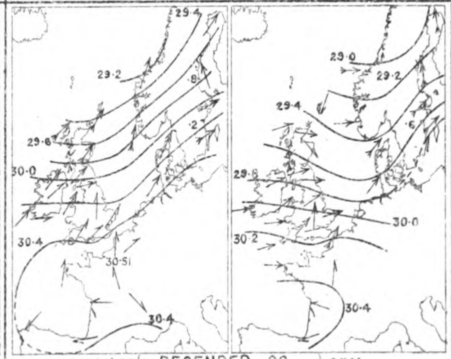
8 A.M. DECEMBER 19 *6 P.M.*


30·2
30·4
30·76
30·6
30·0
30·4
30·2
30·77
30·6
30·4
30·28

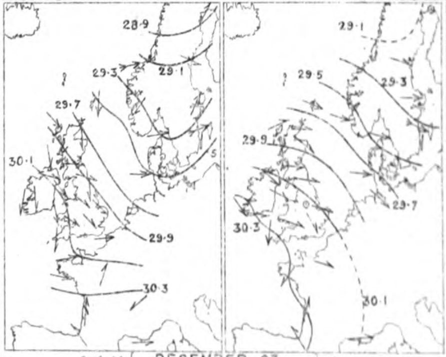
8 A.M. DECEMBER 20 *6 P.M.*


30·0
30·2
30·4
30·6
30·6
30·4
30·25
29·8
29·7
30·3
30·1
30·63
30·5
30·5
30·3

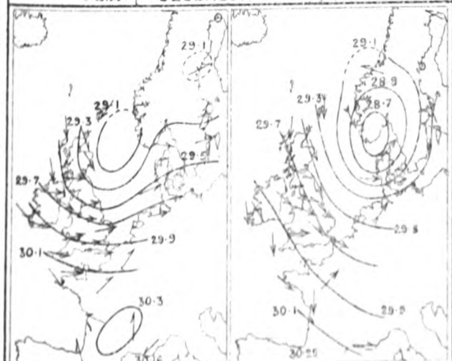
8 A.M. DECEMBER 21 *6 P.M.*


29·4
29·2
29·6
30·0
30·4
30·51
30·4
29·0
29·2
29·4
29·6
30·0
30·2
30·4

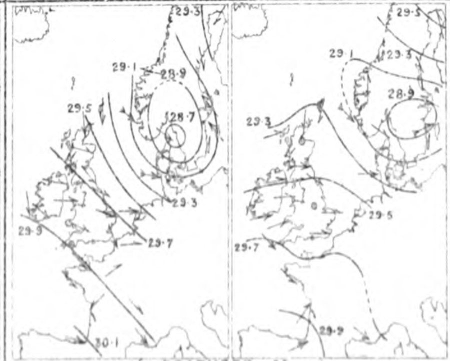
8 A.M. DECEMBER 22 *6 P.M.*


28·9
29·3
29·1
29·7
30·1
29·9
30·3
29·1
29·5
29·3
29·9
29·7
30·3
30·1

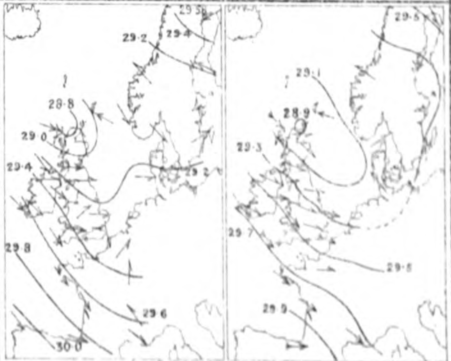
8 A.M. DECEMBER 23 *6 P.M.*


29·1
29·1
29·3
29·7
29·9
29·9
30·1
30·3
30·16
29·1
29·34
28·9
28·7
29·7
29·5
30·1
29·9
30·25

8 A.M. DECEMBER 24 *6 P.M.*


29·3
29·1
28·9
29·5
28·7
29·3
29·3
29·7
30·1
29·5
29·1
29·3
28·9
29·3
29·5
29·7
29·9

8 A.M. DECEMBER 25 *6 P.M.*

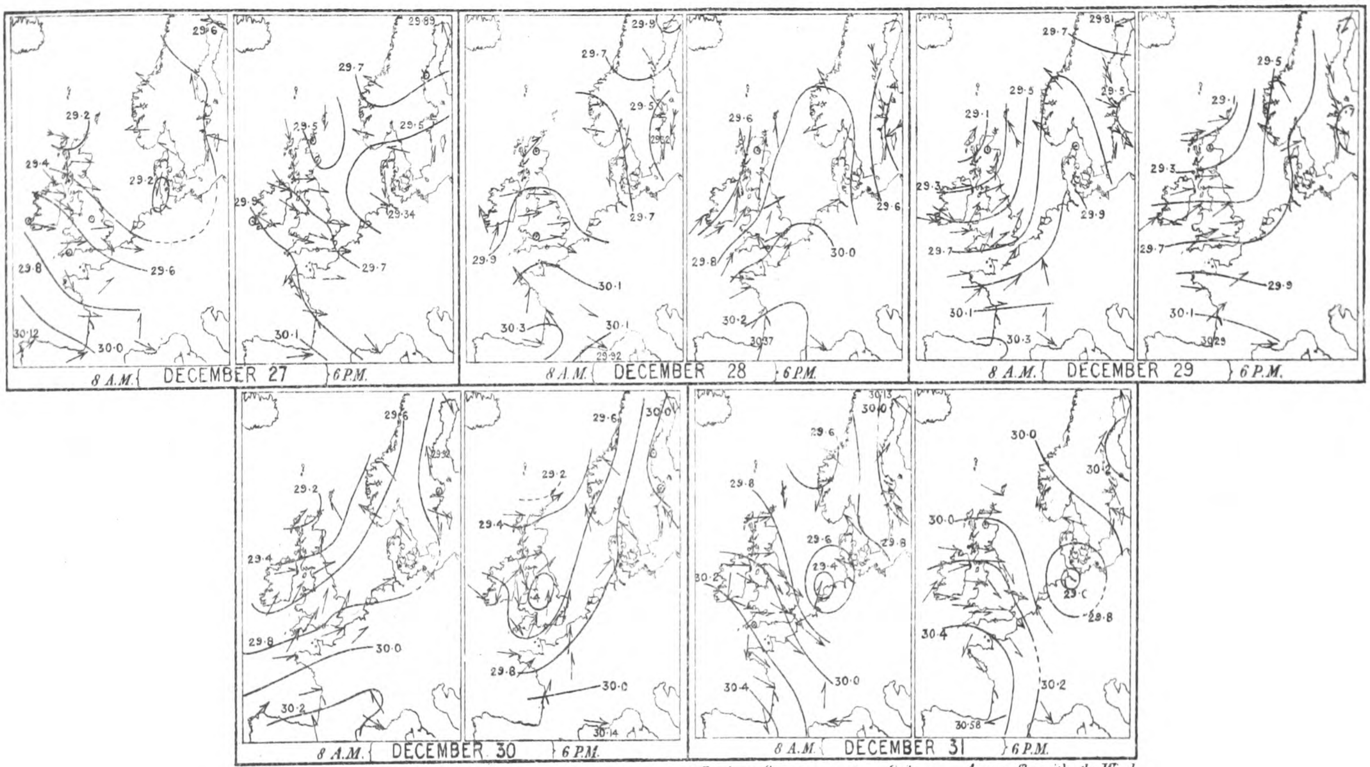

29·3
29·2
29·4
28·8
29·0
29·4
29·2
29·8
29·6
30·0
29·5
29·1
28·9
29·3
29·7
29·5
29·9

8 A.M. DECEMBER 26 *6 P.M.*

Wind Force... ⊙ - Calm. ——→ *Light to Moderate.* ——→ *Fresh to Strong.* ——→ *Gale.* *Arrows fly with the Wind.*

DECEMBER, 1877.

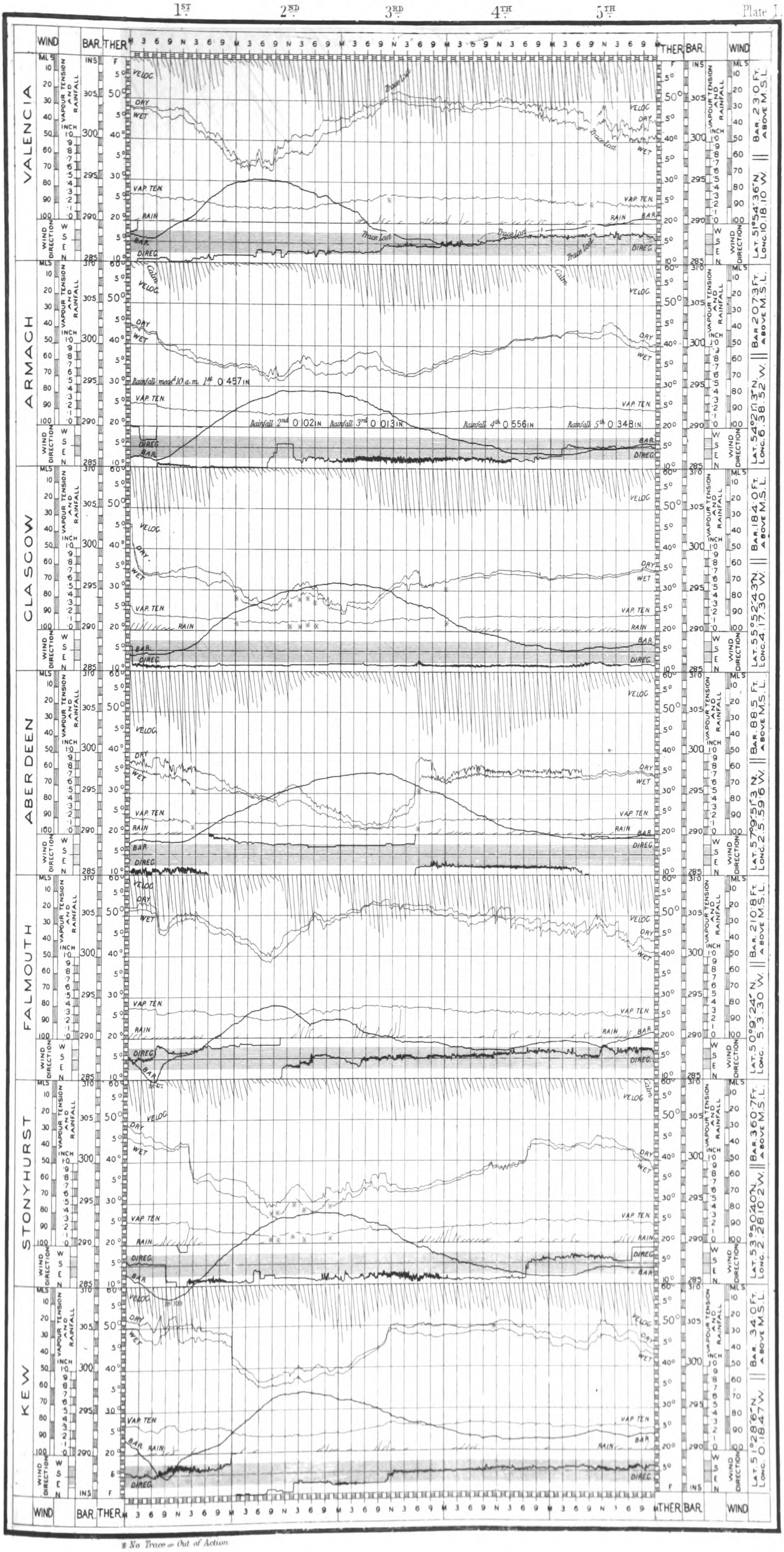
Chart Plate 21.


8 A.M. DECEMBER 27 6 P.M.
8 A.M. DECEMBER 28 6 P.M.
8 A.M. DECEMBER 29 6 P.M.
8 A.M. DECEMBER 30 6 P.M.
8 A.M. DECEMBER 31 6 P.M.
29·6
29·2
29·4
29·8
29·6
30·12
30·0
29·89
29·7
29·5
29·34
30·1
29·9
29·5
29·92
30·1
30·3
29·82
30·0
30·2
30·37
29·81
29·1
29·3
30·3
30·23
30·13
30·14
30·58
30·4
30·2

Wind Force _ ⊙ :- Calm. ——→ Light to Moderate. ——→ Fresh to Strong. ·→——→ Gale. Arrows fly with the Wind.

Fredk Dangerfield Lith. London. 10487

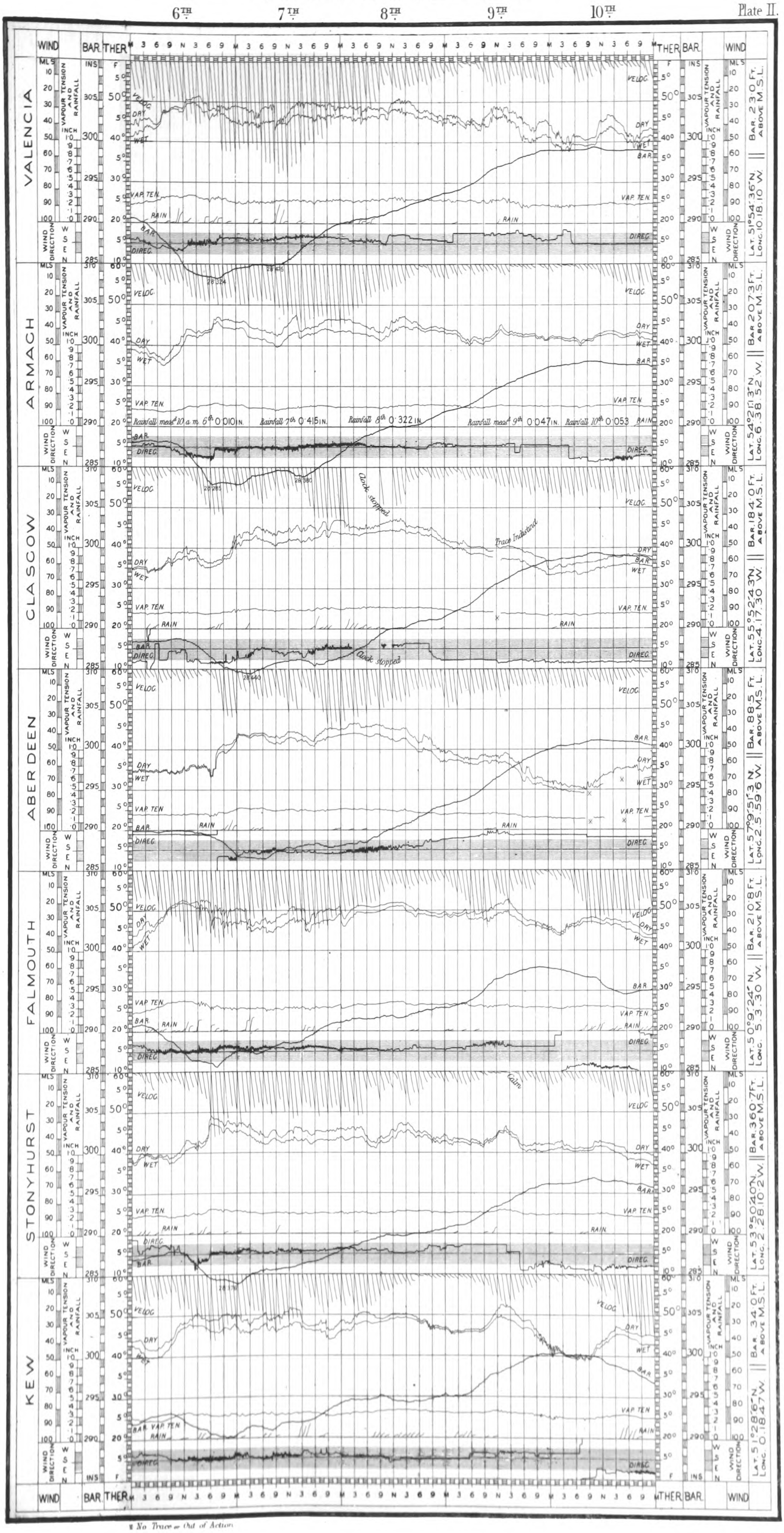
JANUARY — 1877.



* No Trace or Out of Action

JANUARY — 1877.

Plate II.



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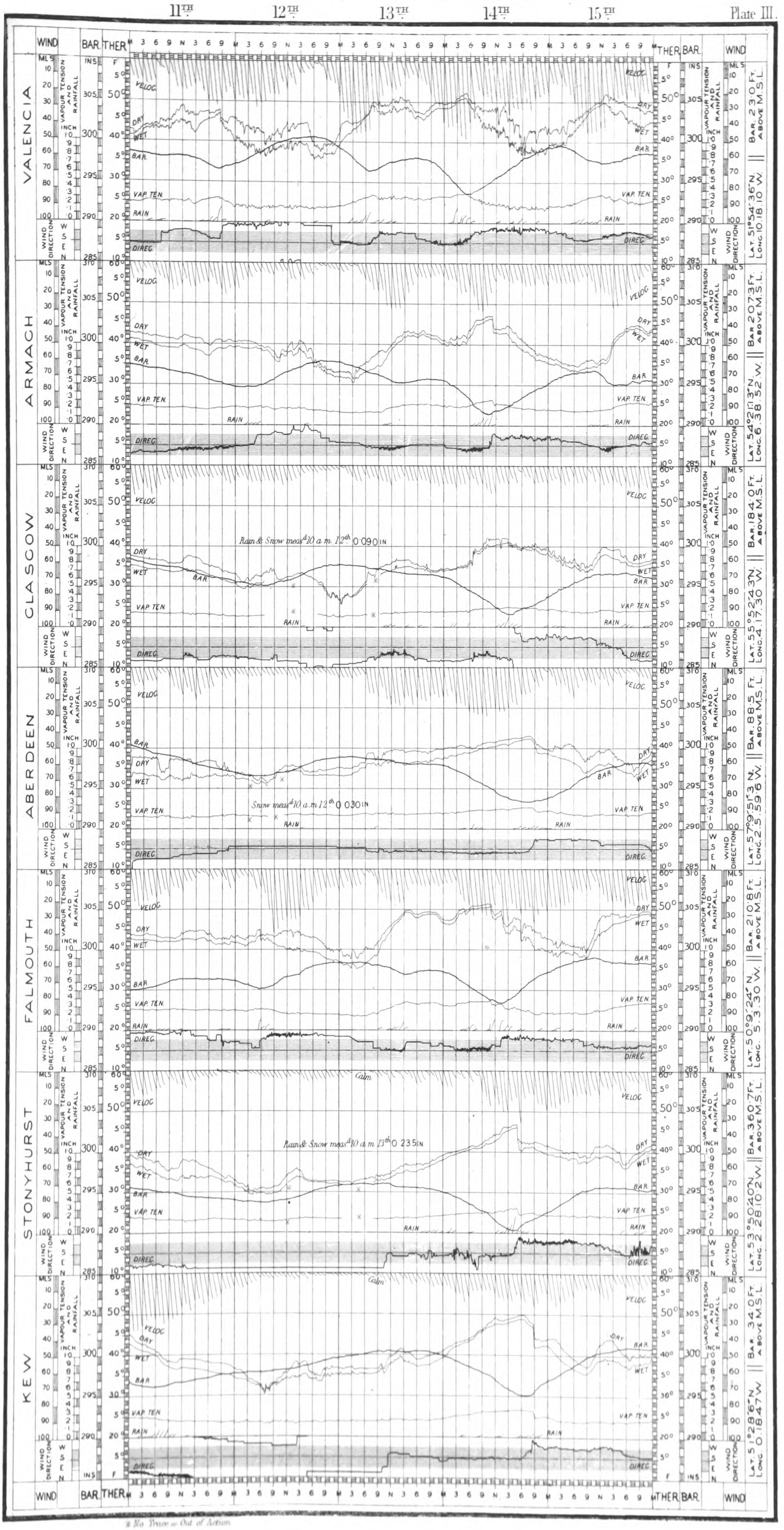
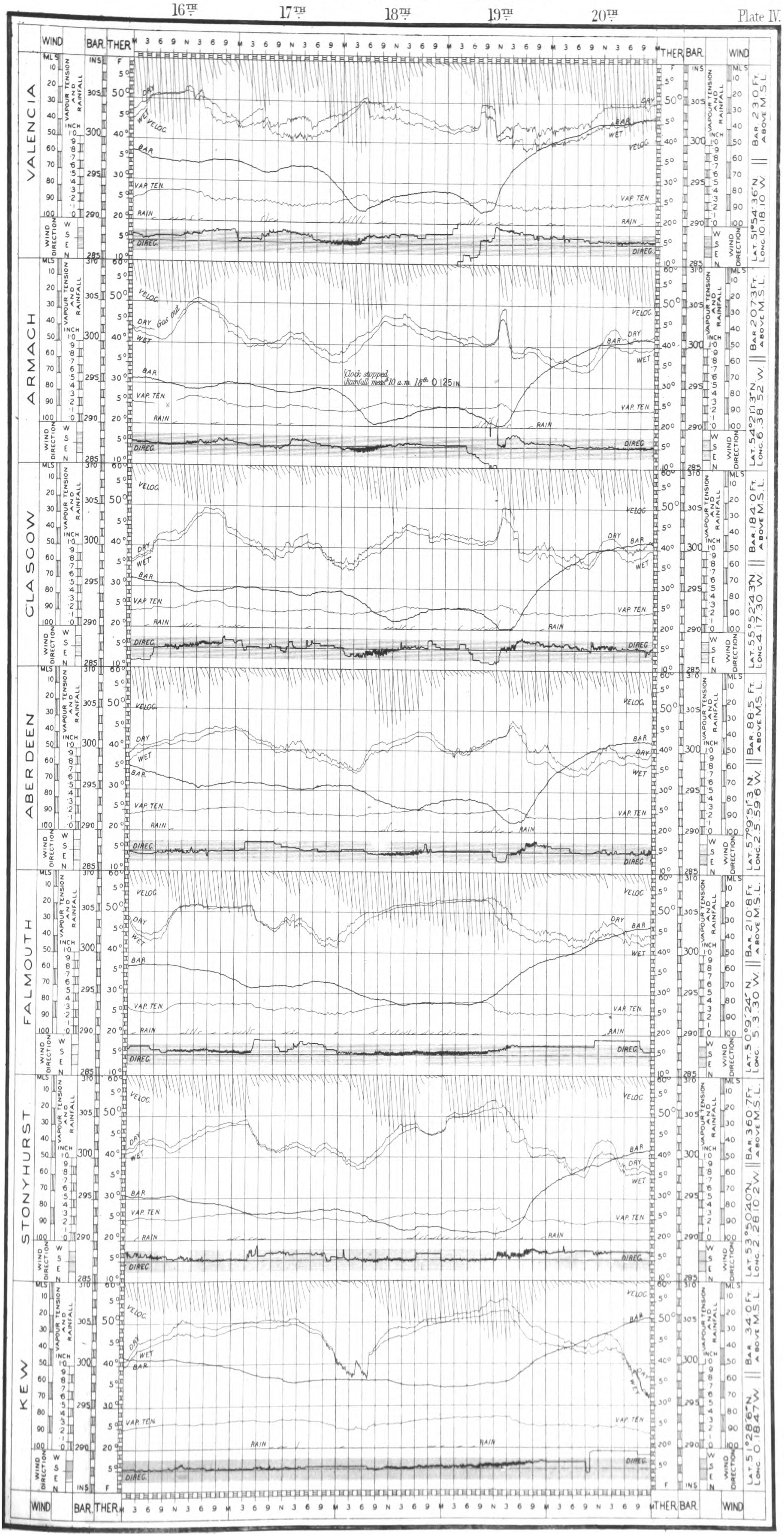
JANUARY — 1877.



× No Trace = Out of Action

JANUARY — 1877.

Plate IV.



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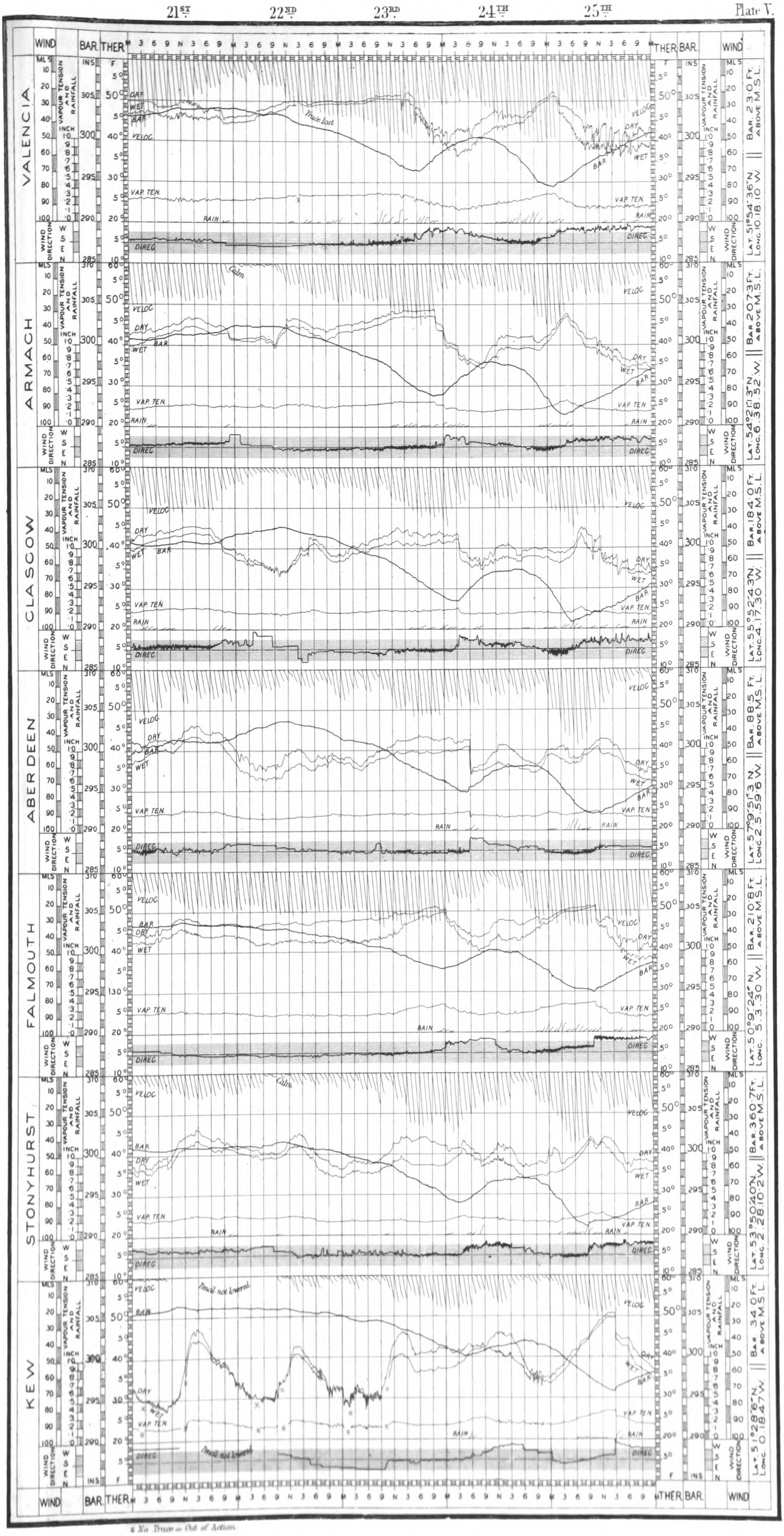
JANUARY —— 1877.

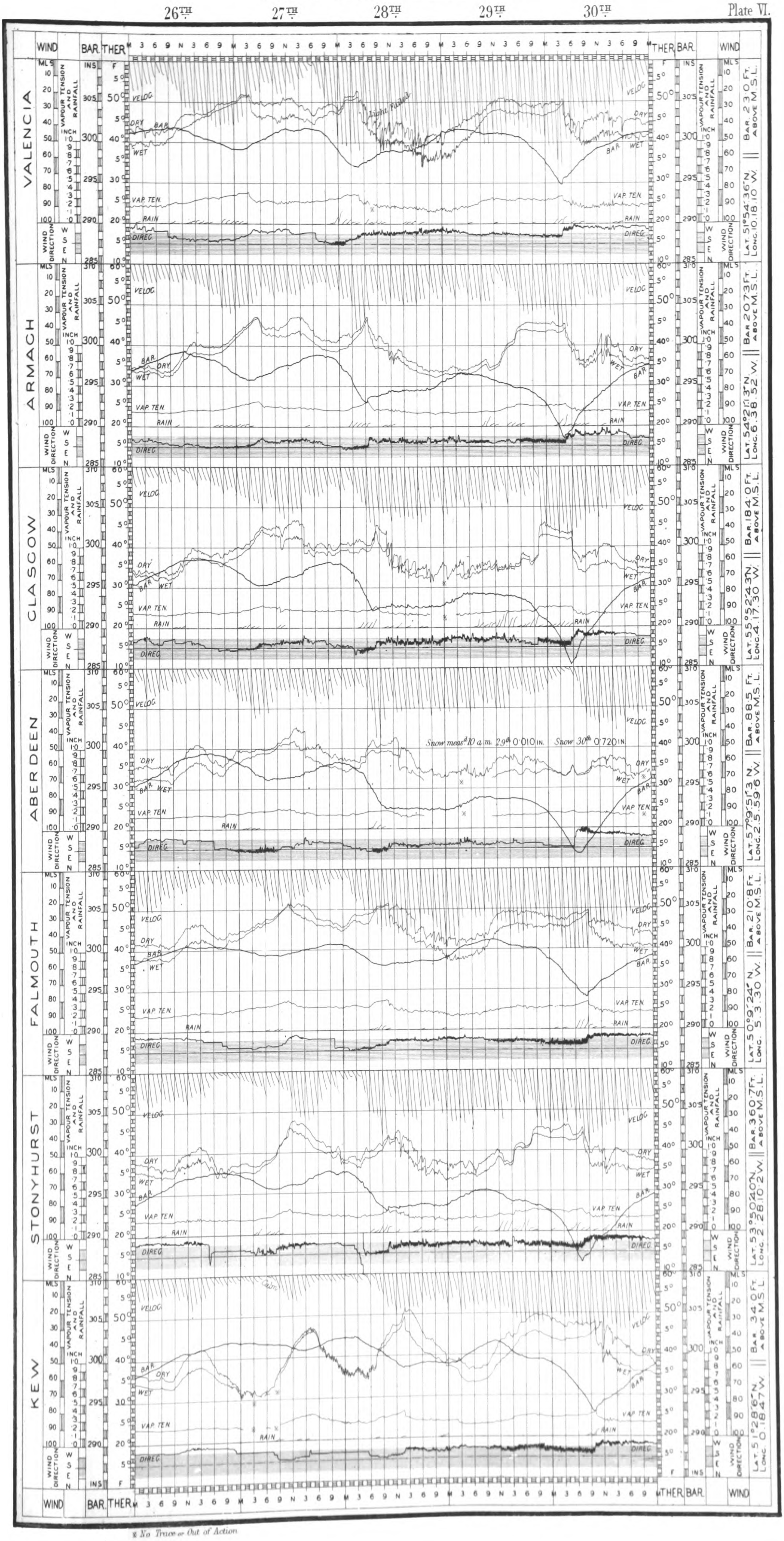
Plate V.



* No Trace = Out of Action.

JANUARY — 1877.

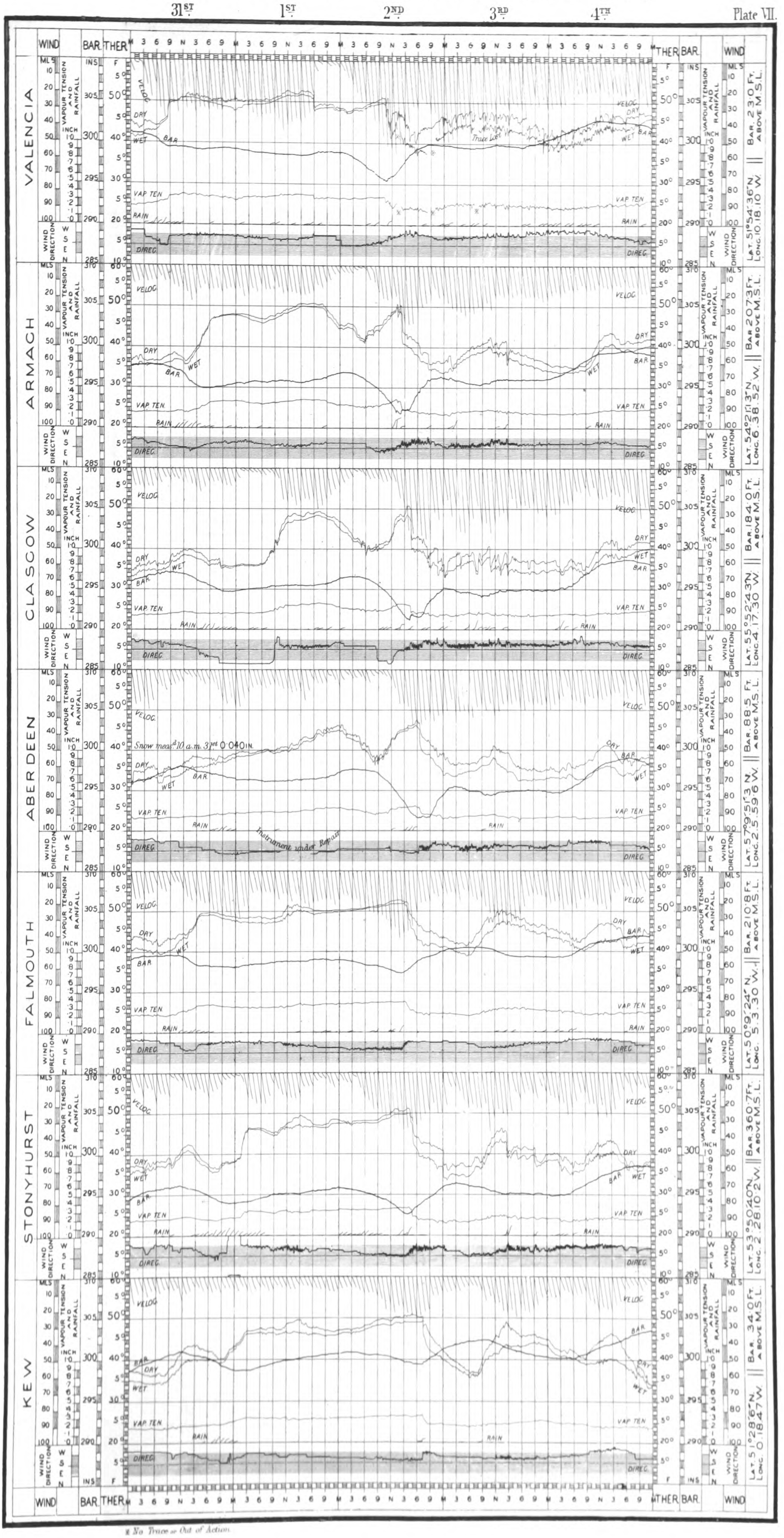
Plate VI.



* No Trace or Out of Action.

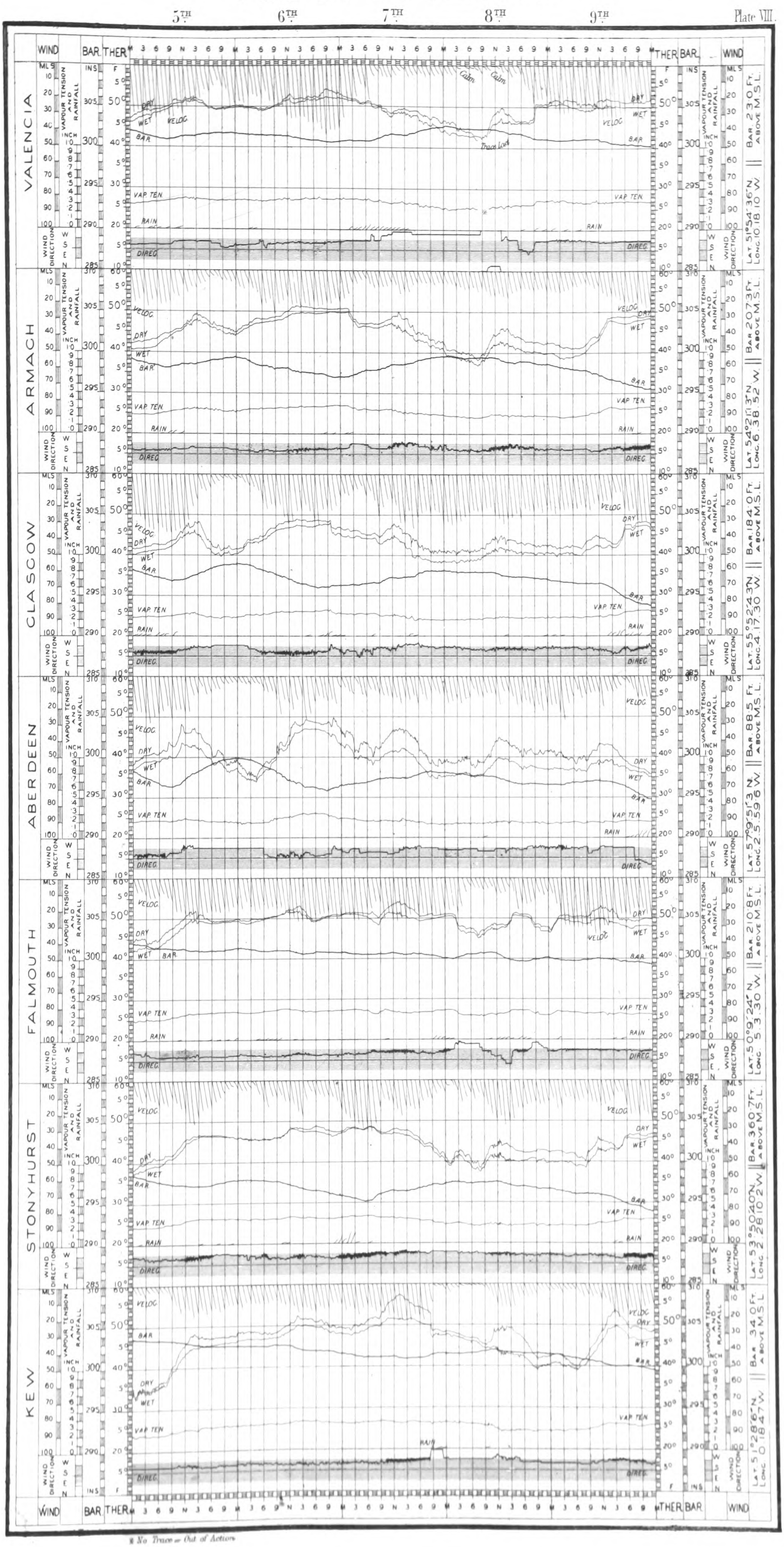
JANUARY & FEBRUARY — 1877.

Plate VII.



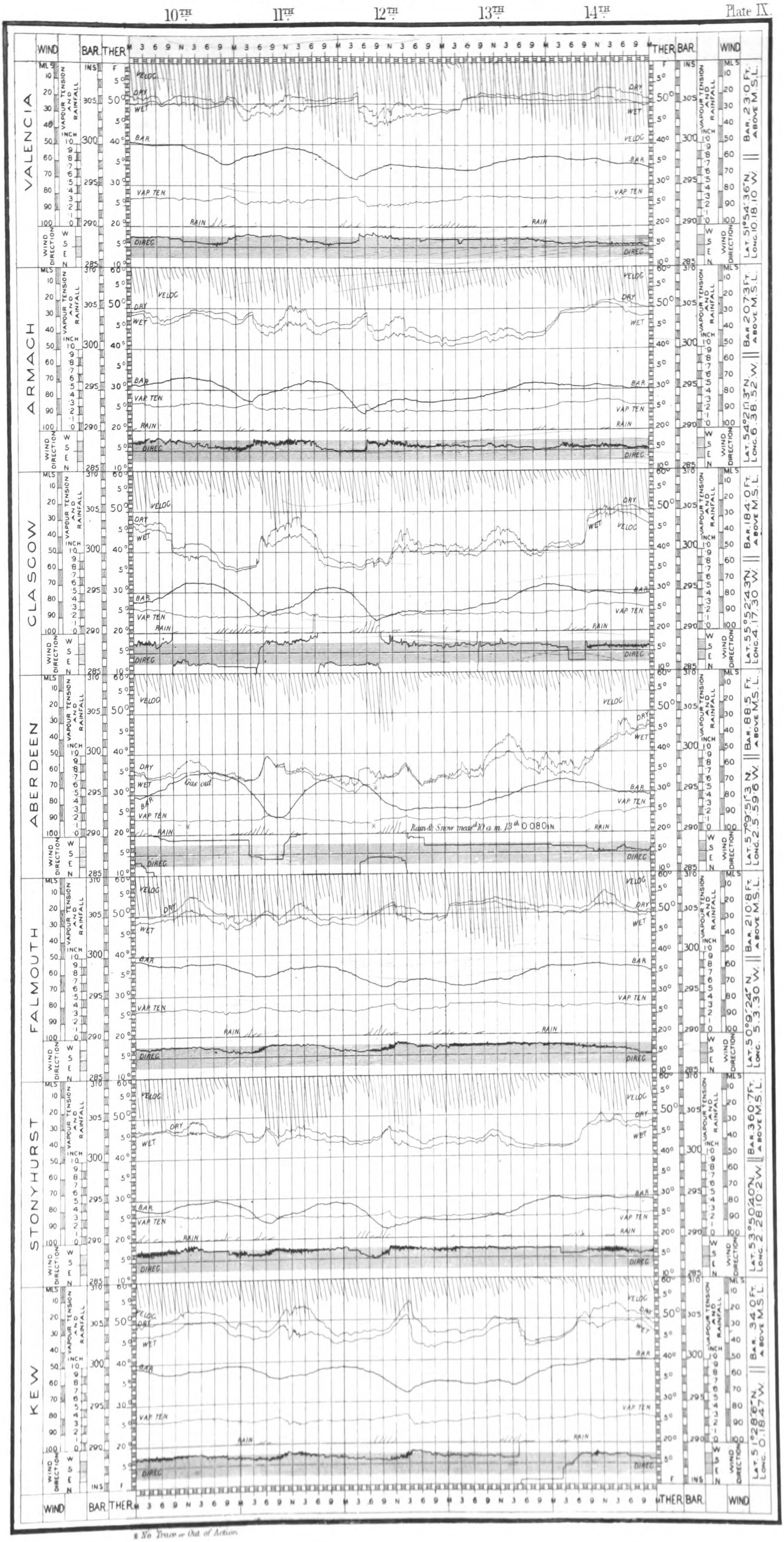
* No Trace or Out of Action.

FEBRUARY — 1877.



* No Trace = Out of Action

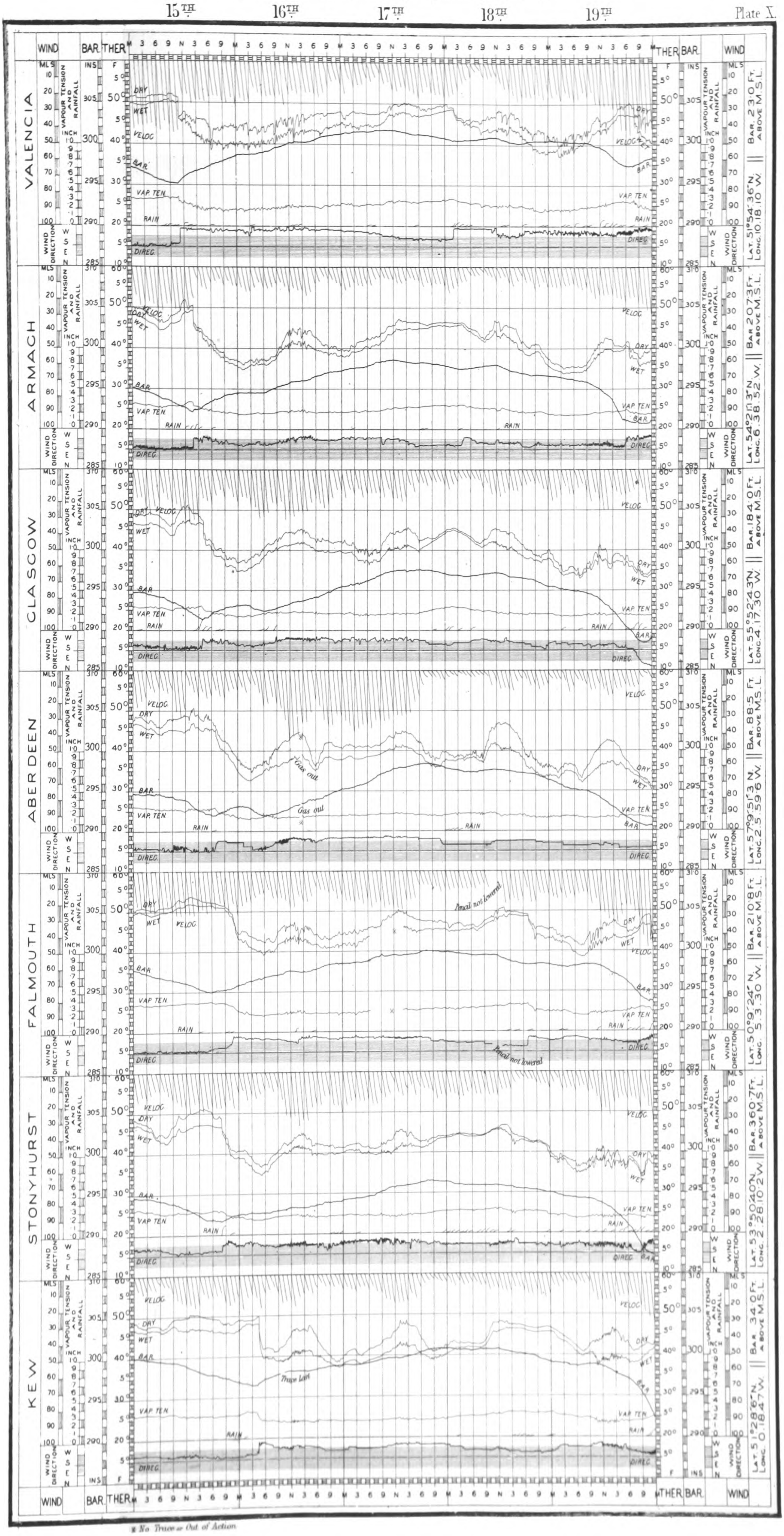
FEBRUARY — 1877.



x No Trace or Out of Action

FEBRUARY — 1877.

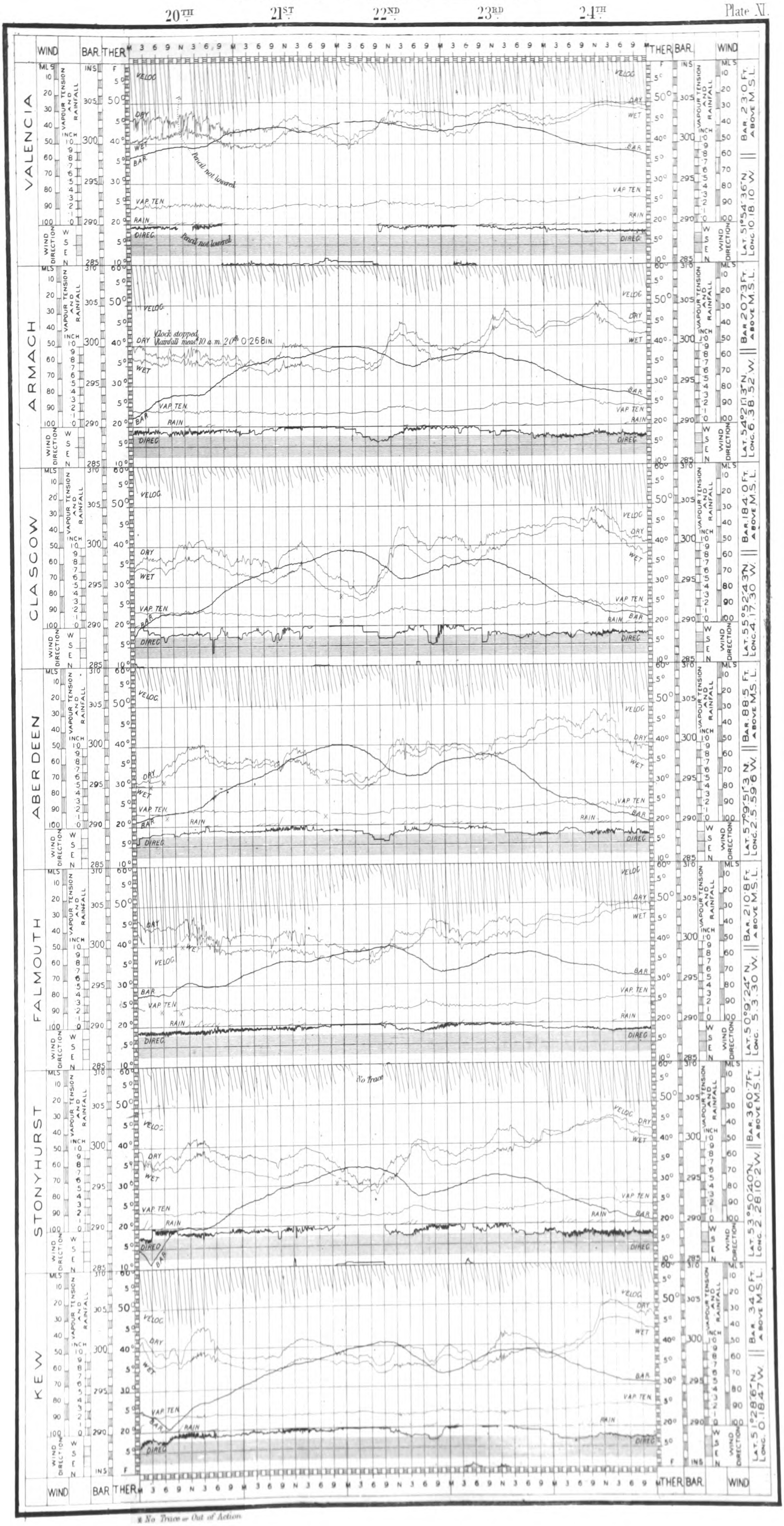
Plate X.



* No Trace or Out of Action

FEBRUARY — 1877.

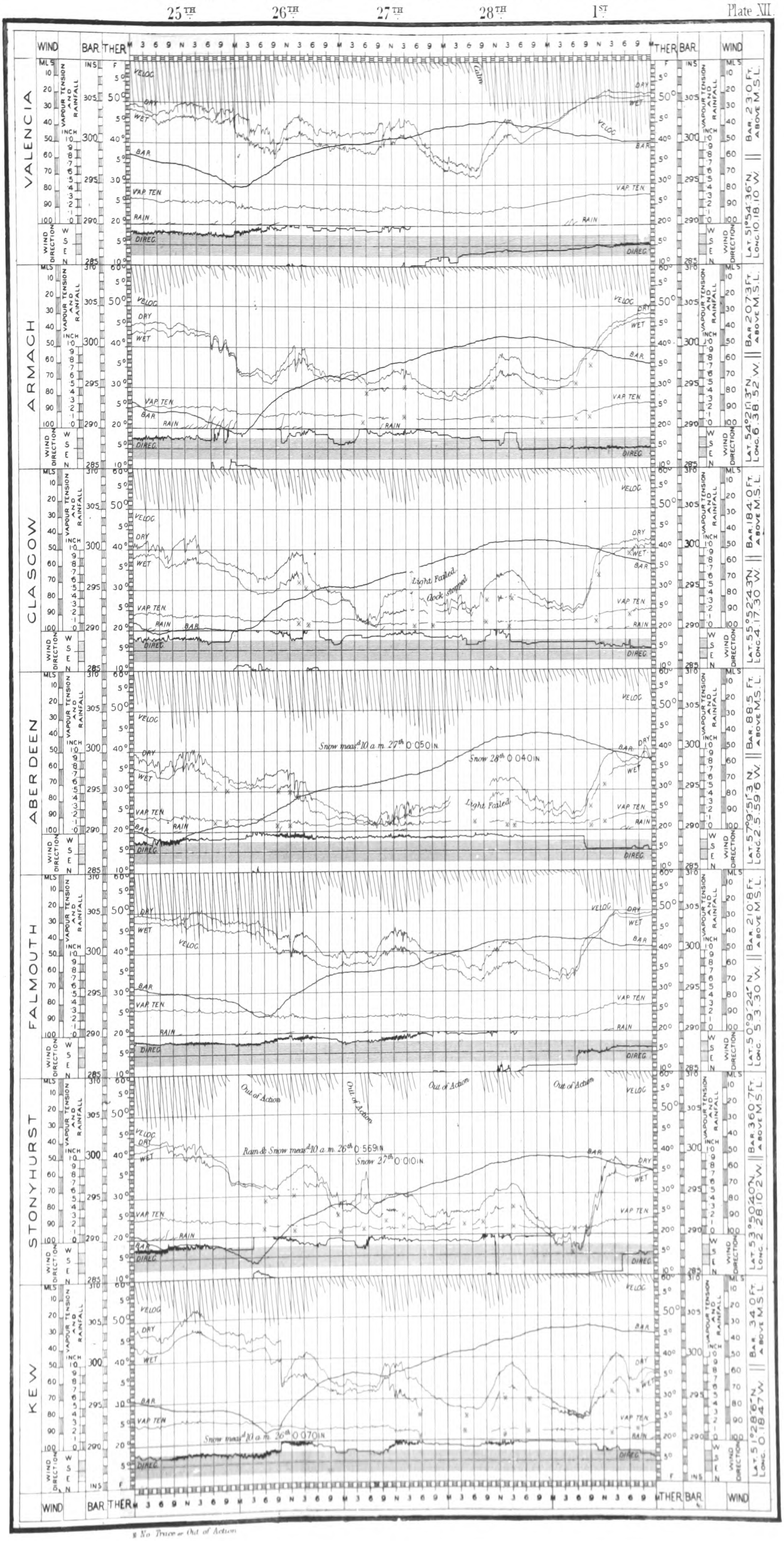
Plate XI.



* No Trace = Out of Action.

FEBRUARY & MARCH — 1877.

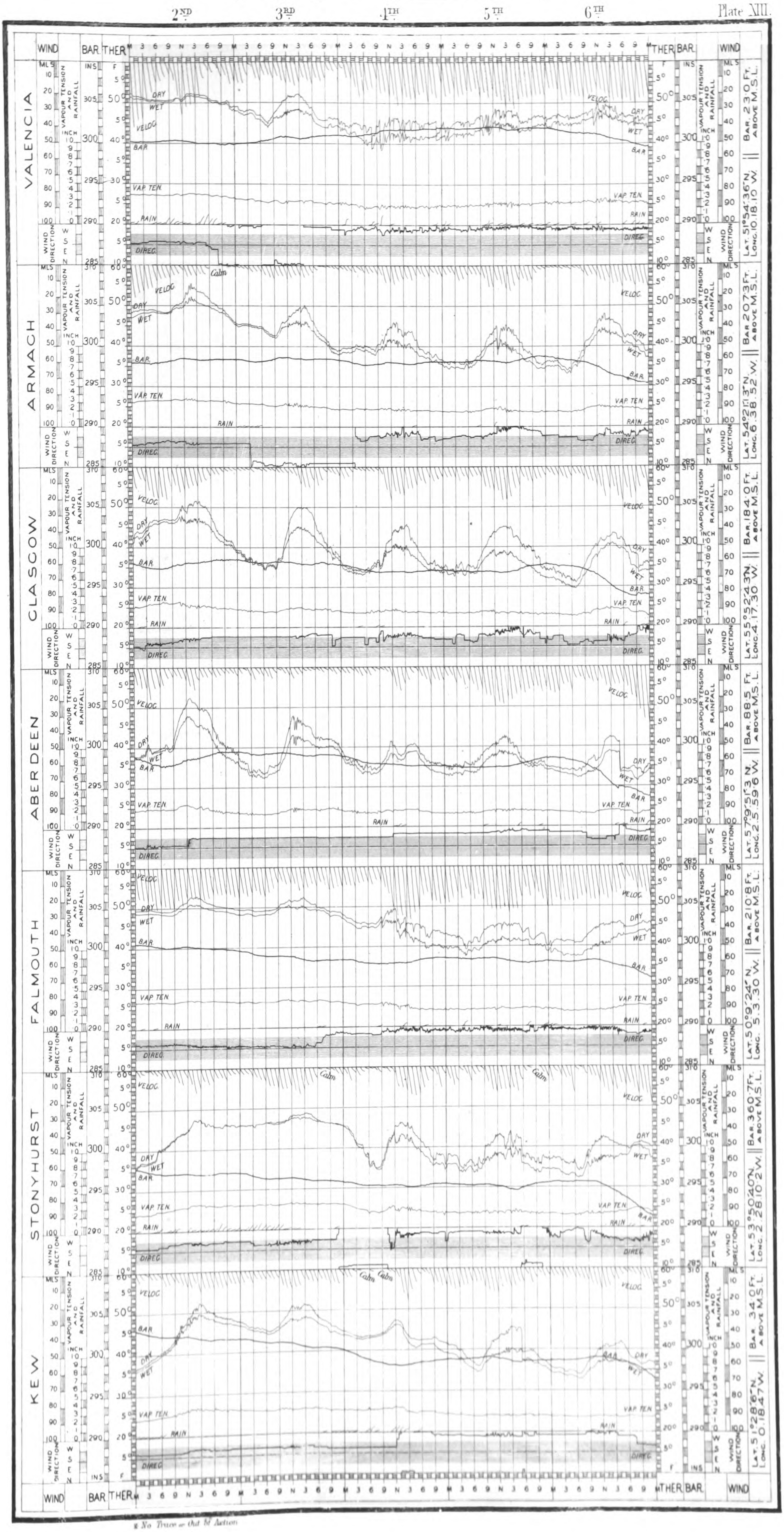
Plate XII.



× No Trace = Out of Action

Plate XIII.

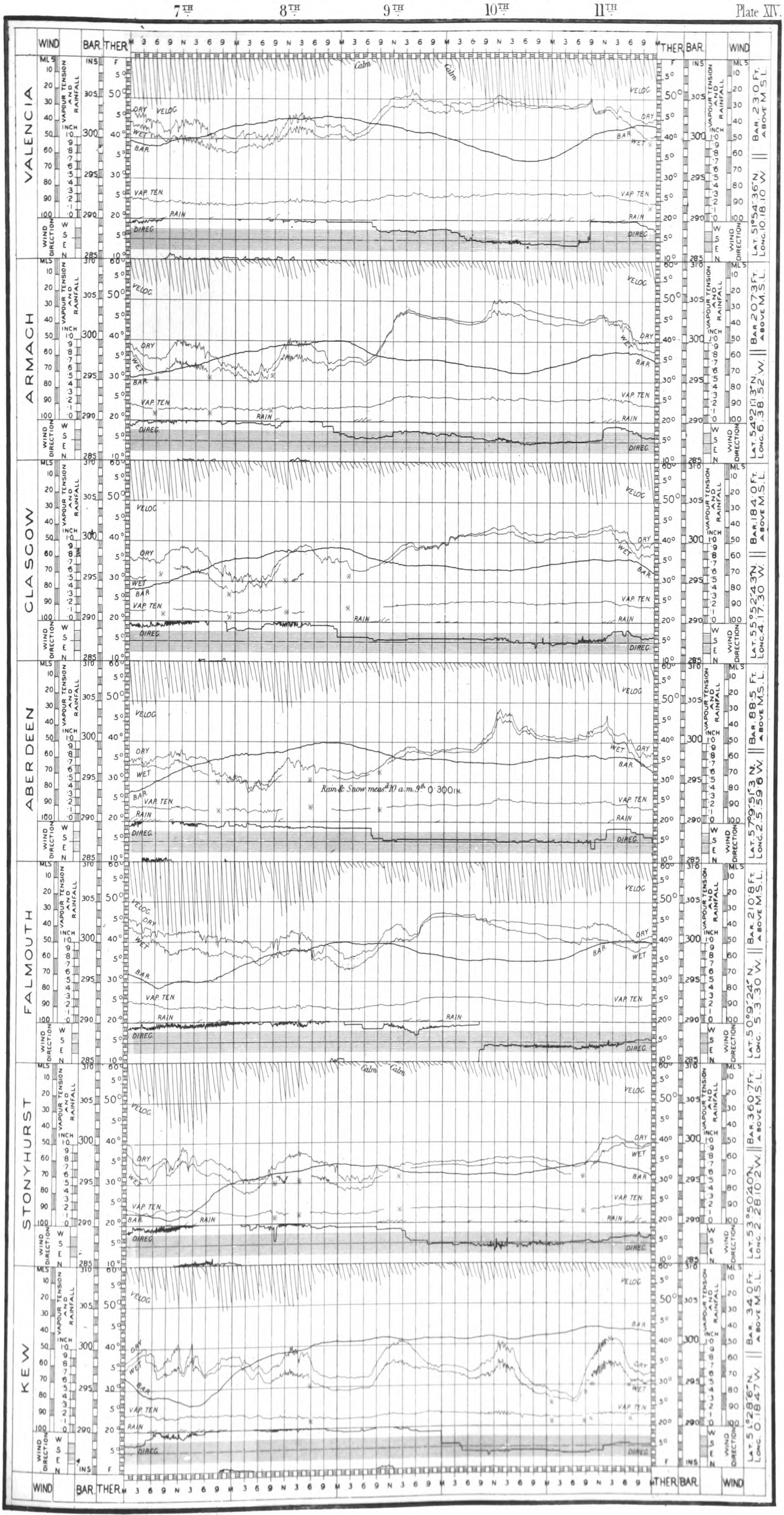
MARCH — 1877.



▨ No Trace or Out of Action

MARCH — 1877.

Plate XIV.



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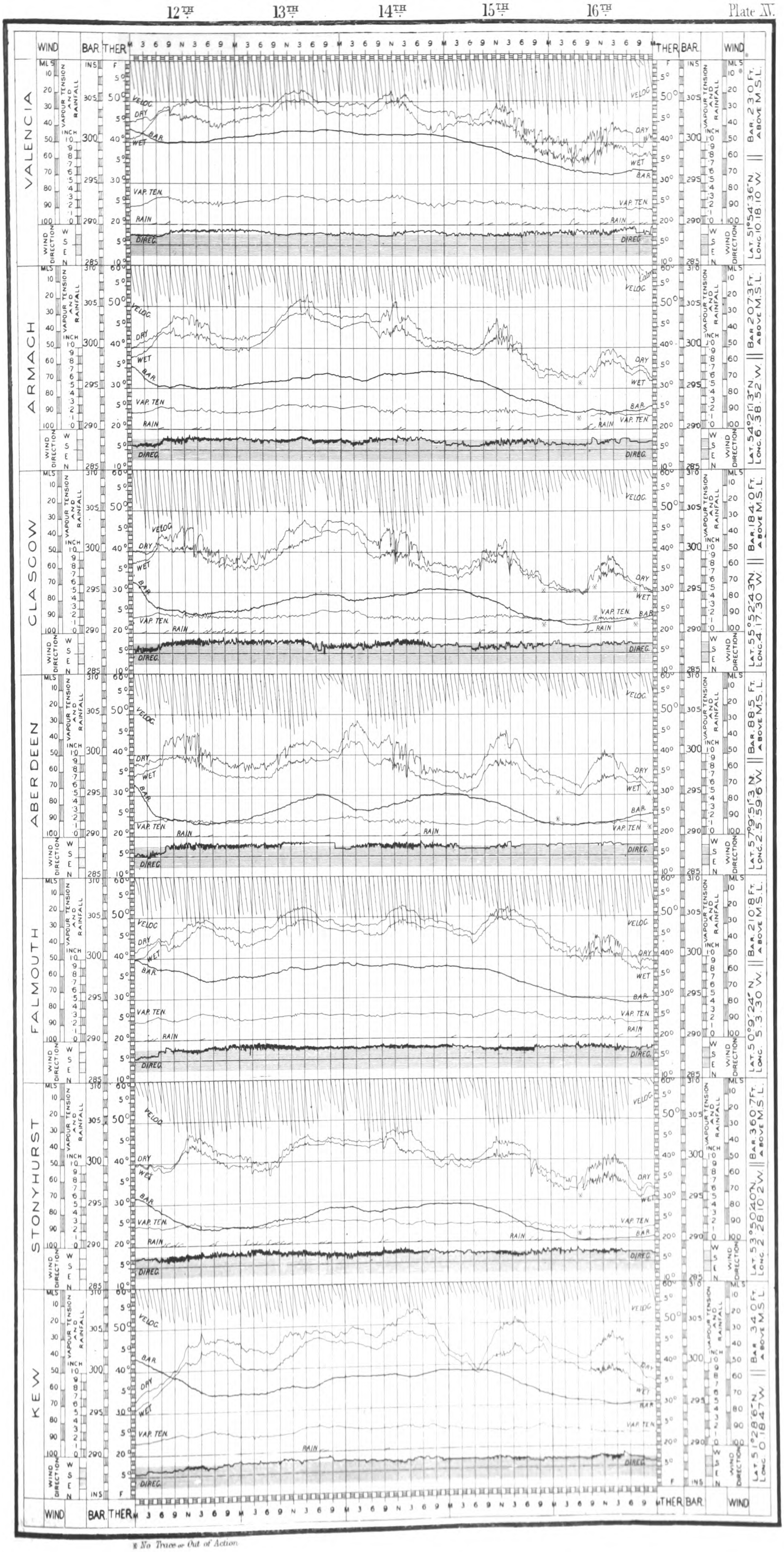
MARCH — 1877.

Plate XV.



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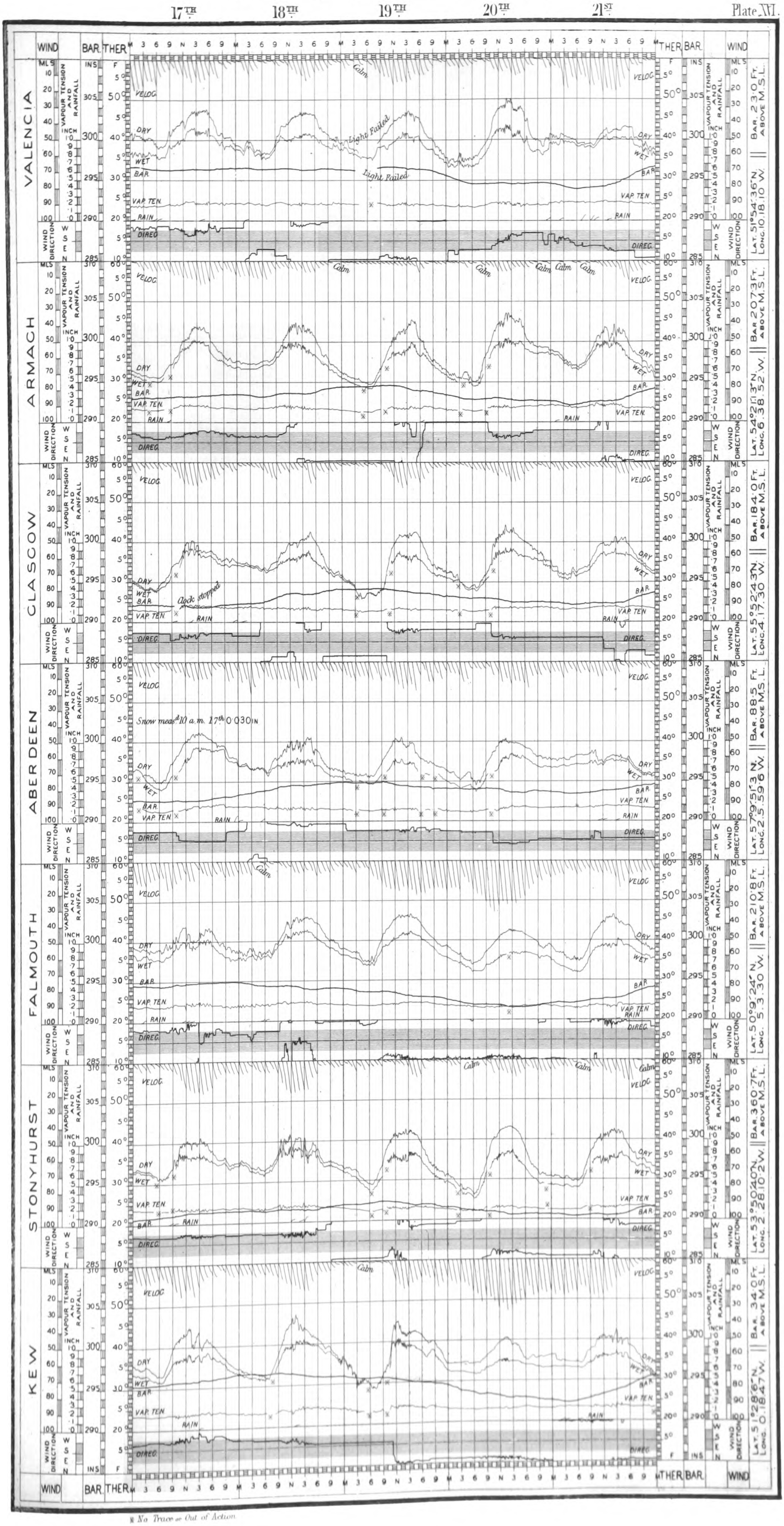
MARCH — 1877.

Plate XVI.



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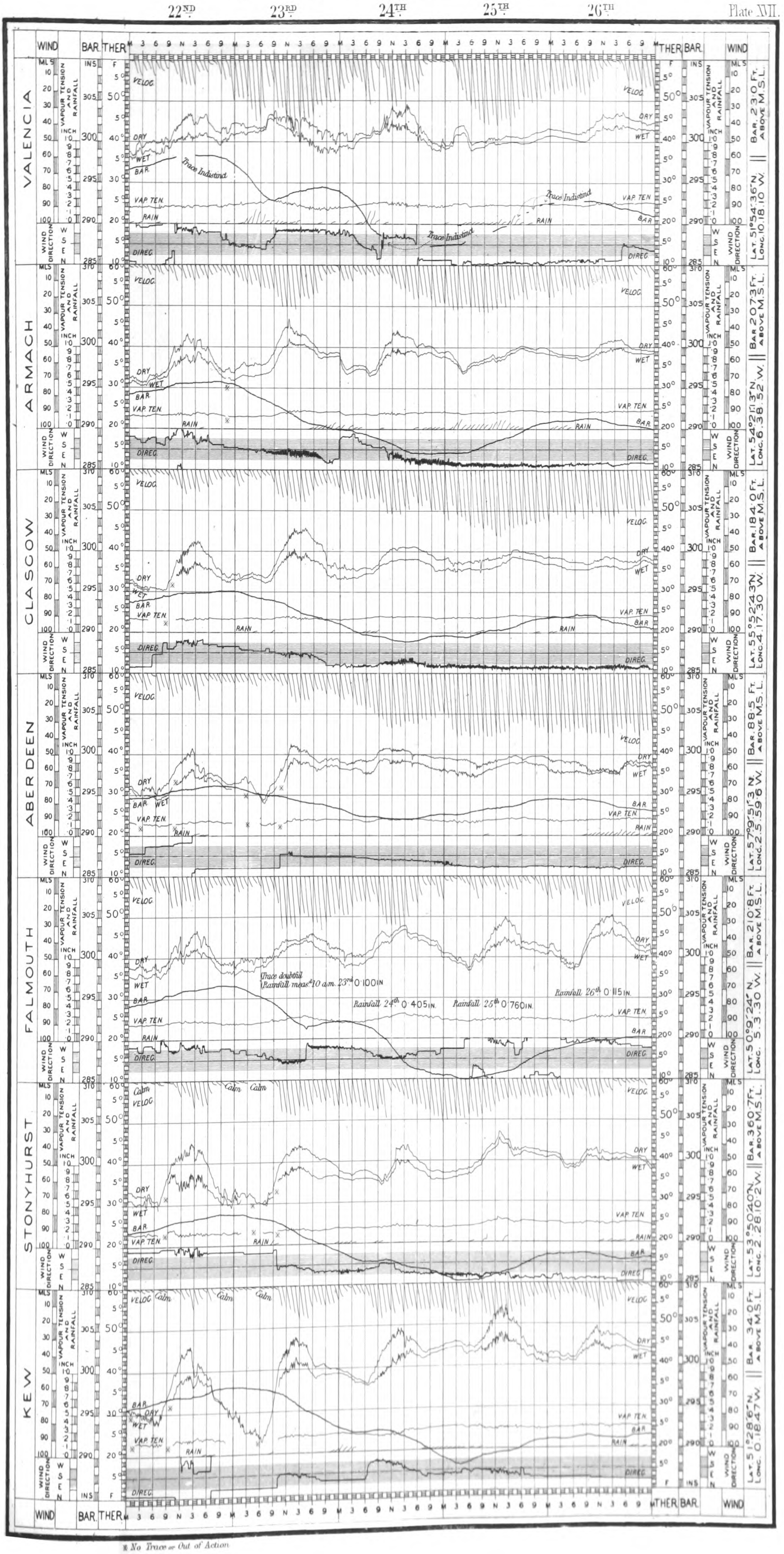
MARCH — 1877.

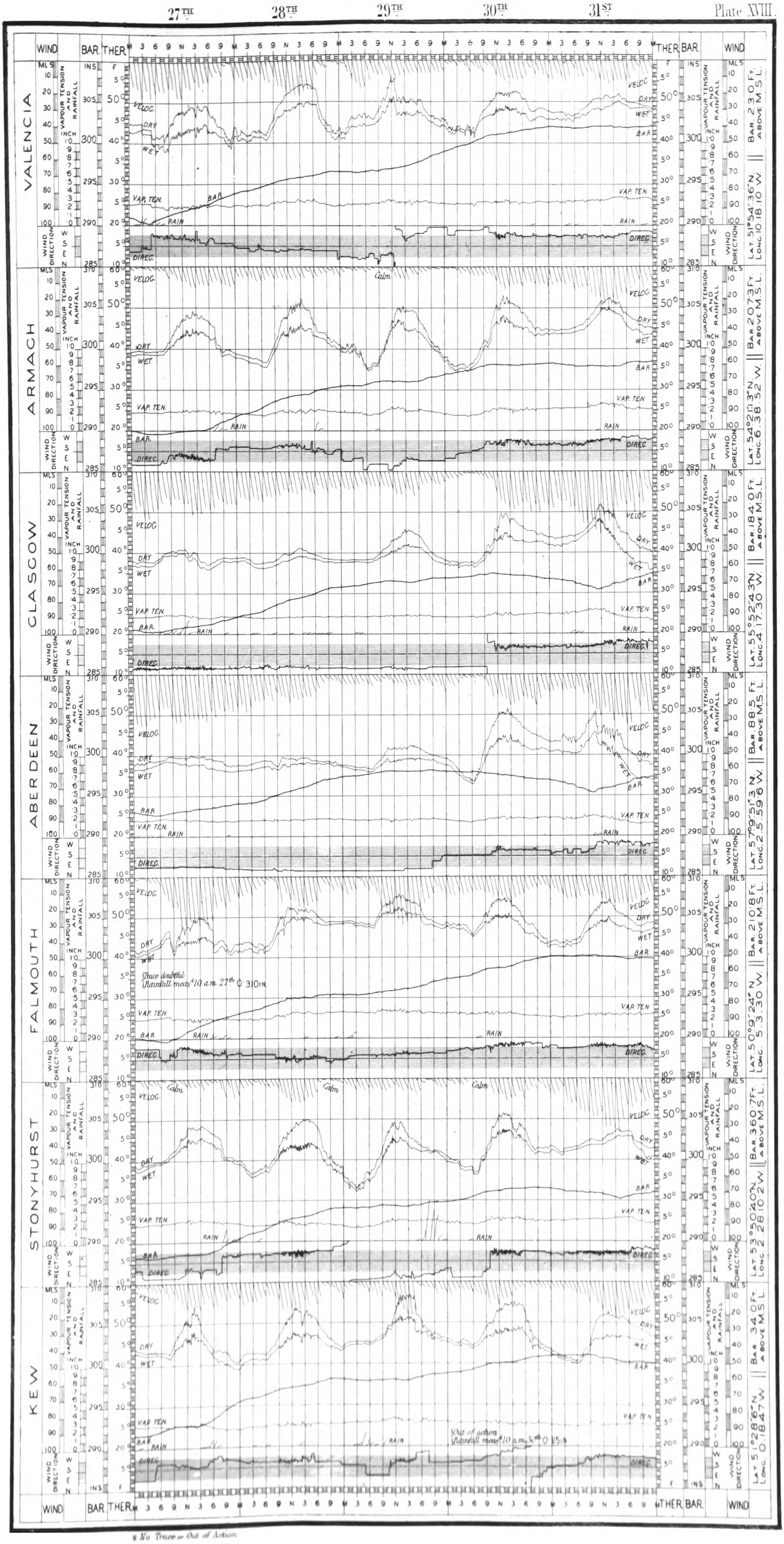
22ND. 23RD. 24TH. 25TH. 26TH.



× No Trace or Out of Action

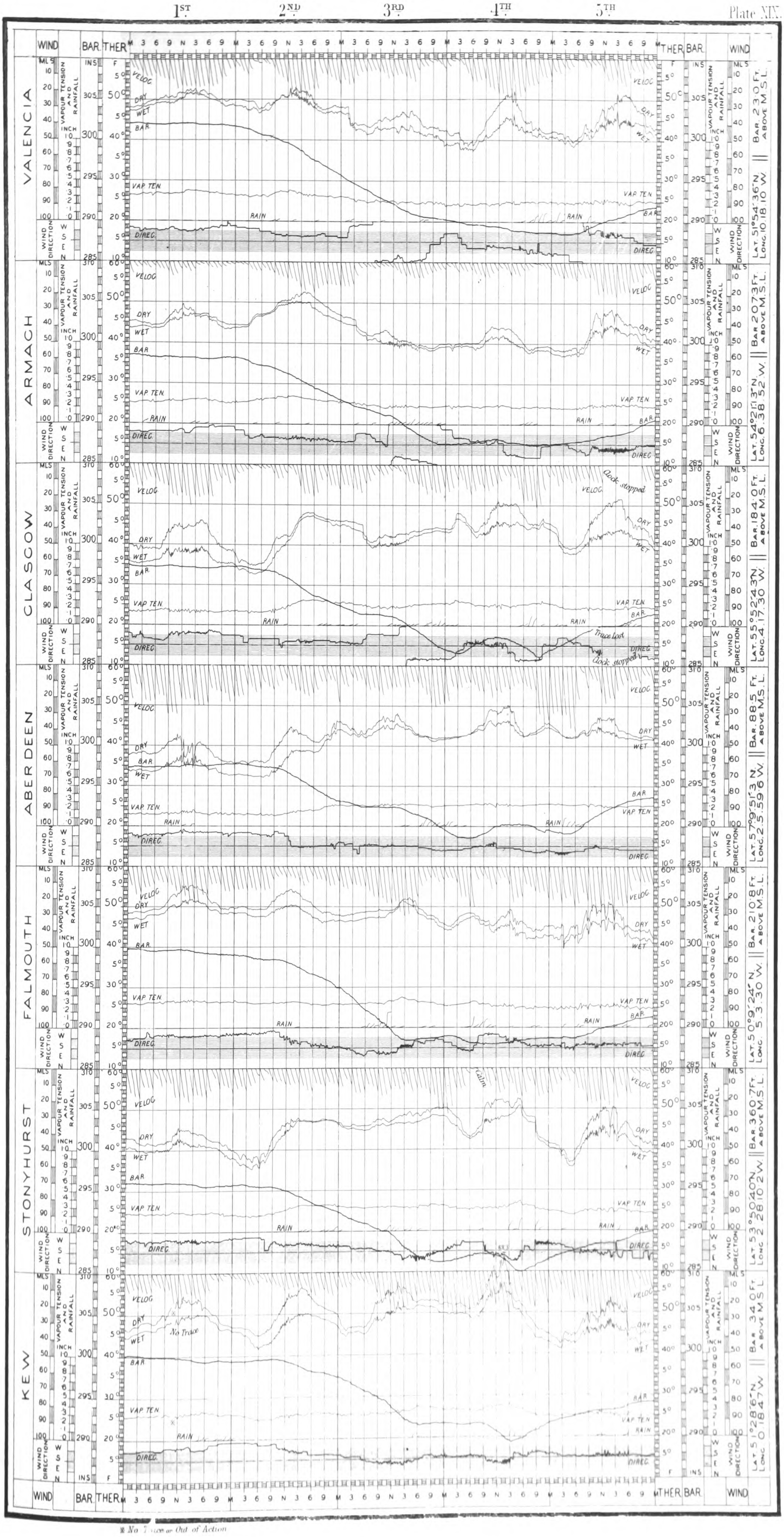
MARCH — 1877.

Plate XVIII.



* No Trace = Out of Action

APRIL 1877.



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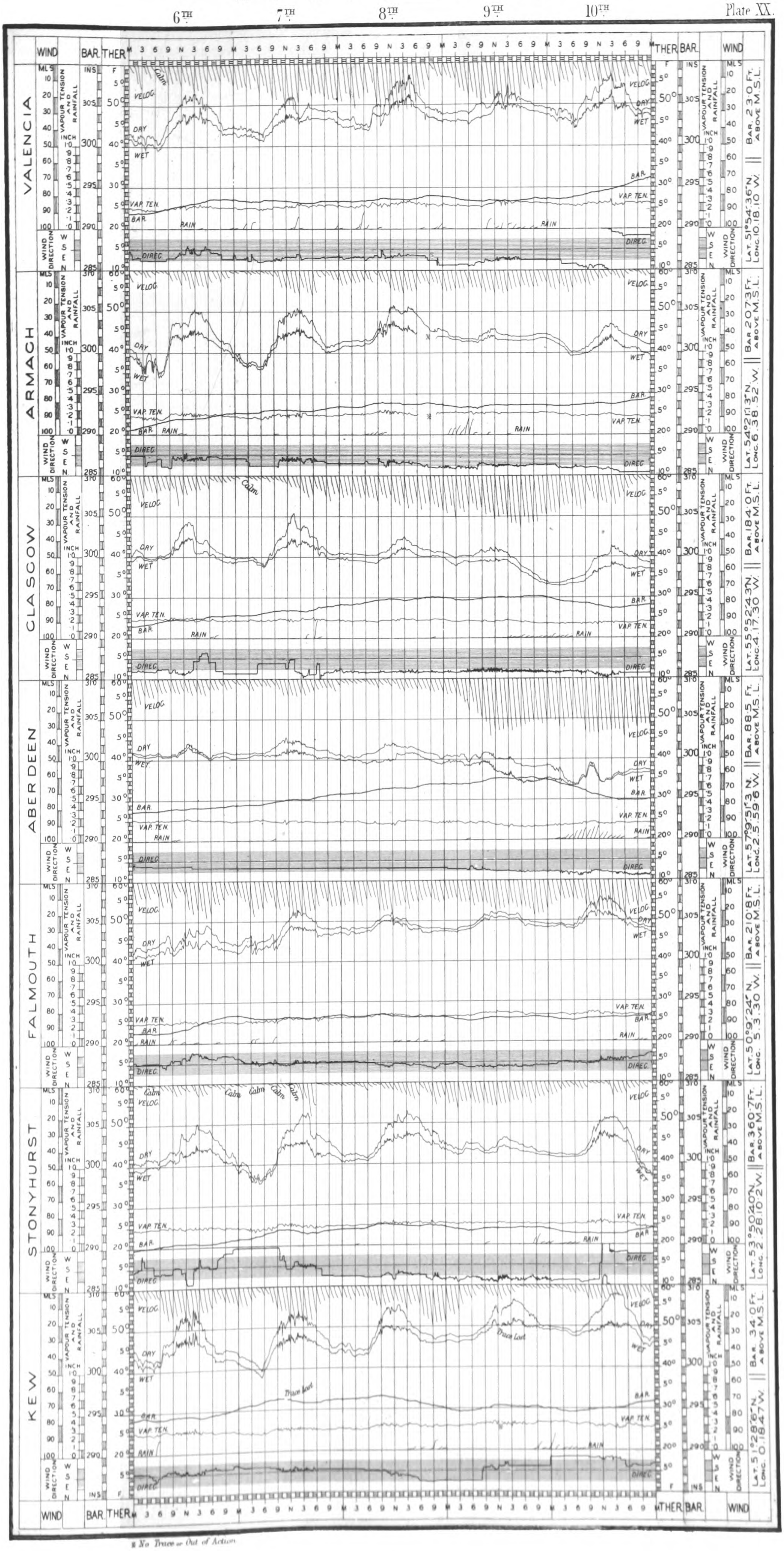
APRIL — 1877.

Plate XX.



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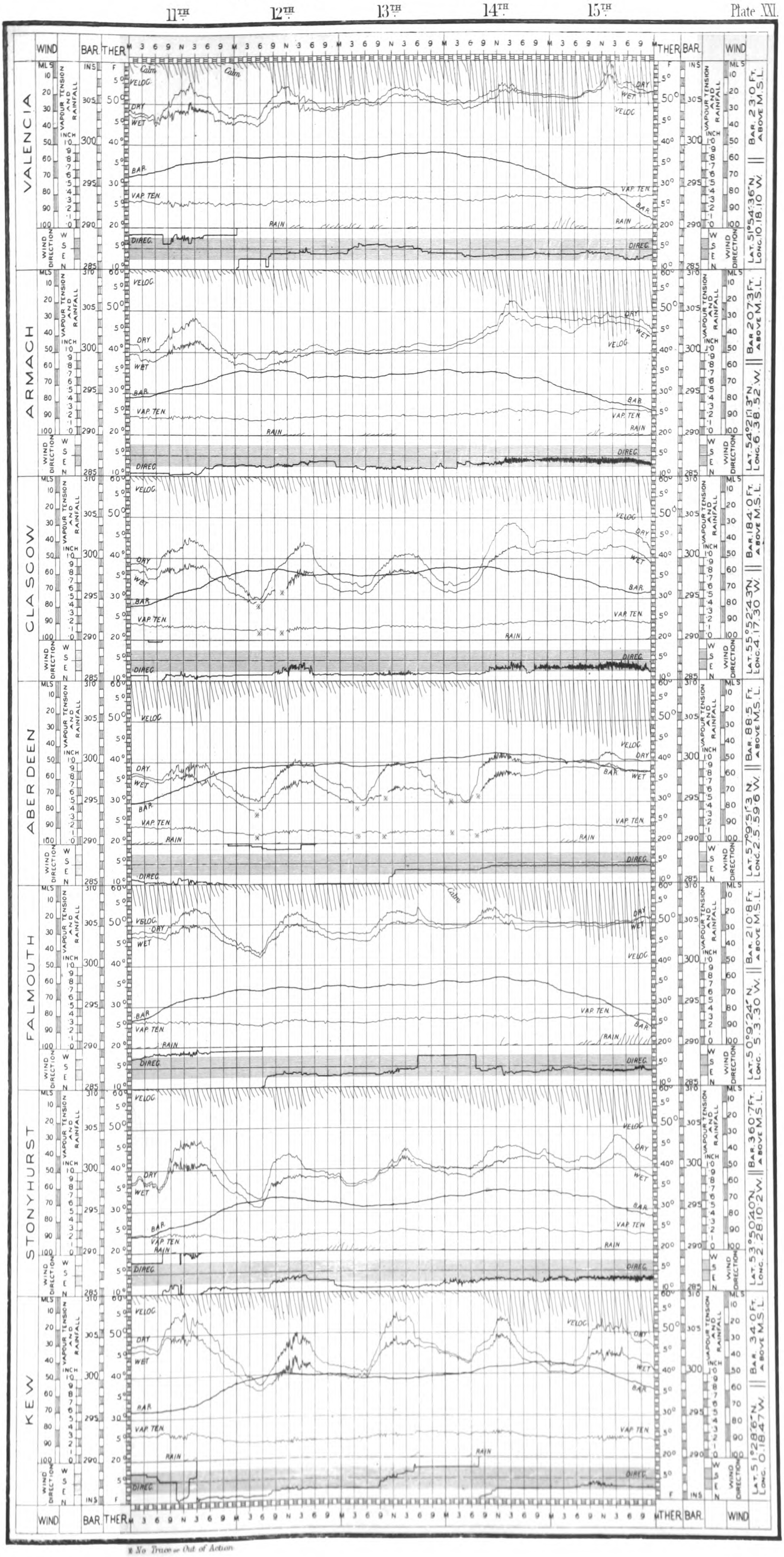
APRIL — 1877.

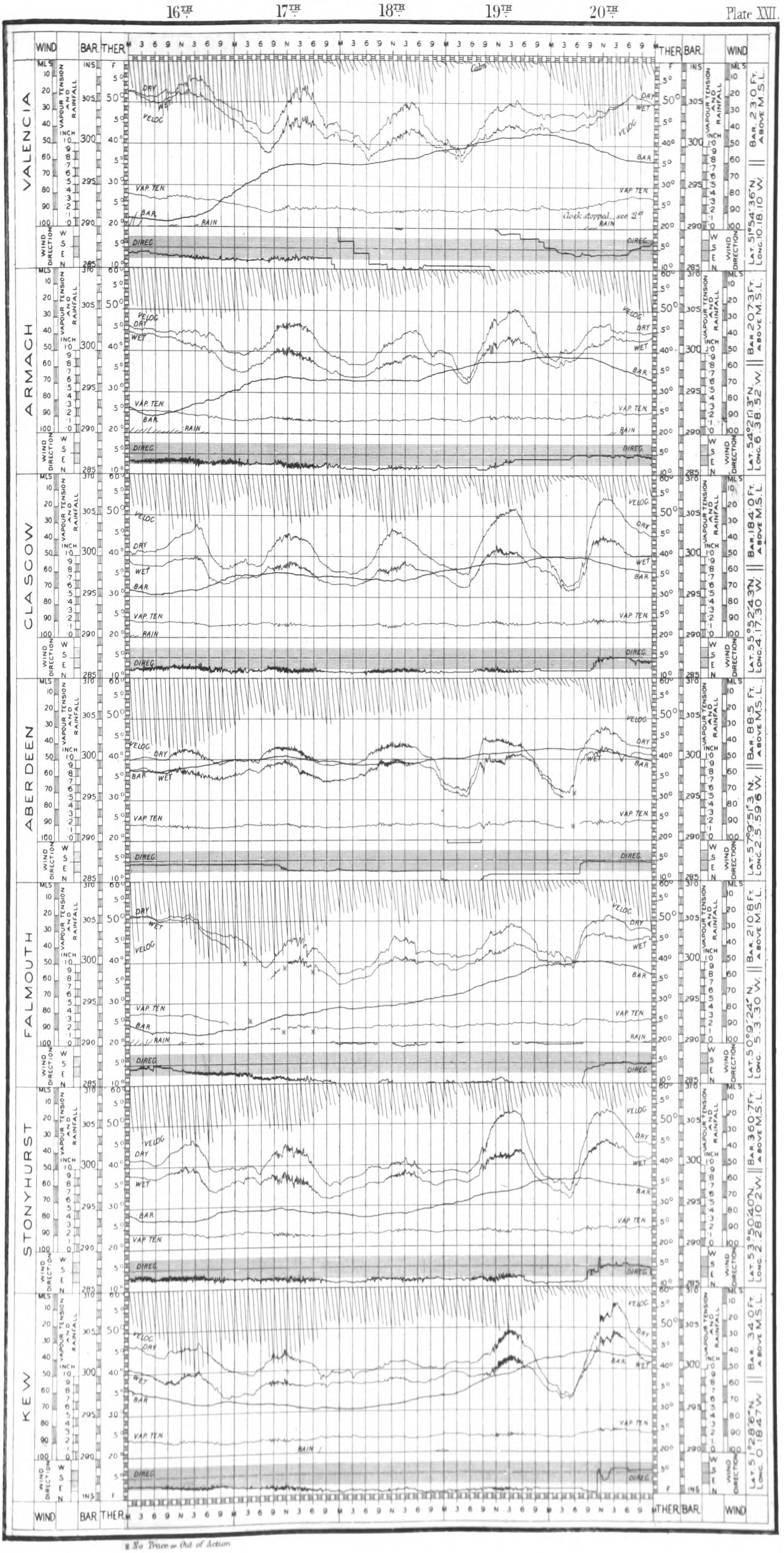
Plate XXI.



* No Trace or Out of Action

A P R I L — 1 8 7 7.

Plate XXII.



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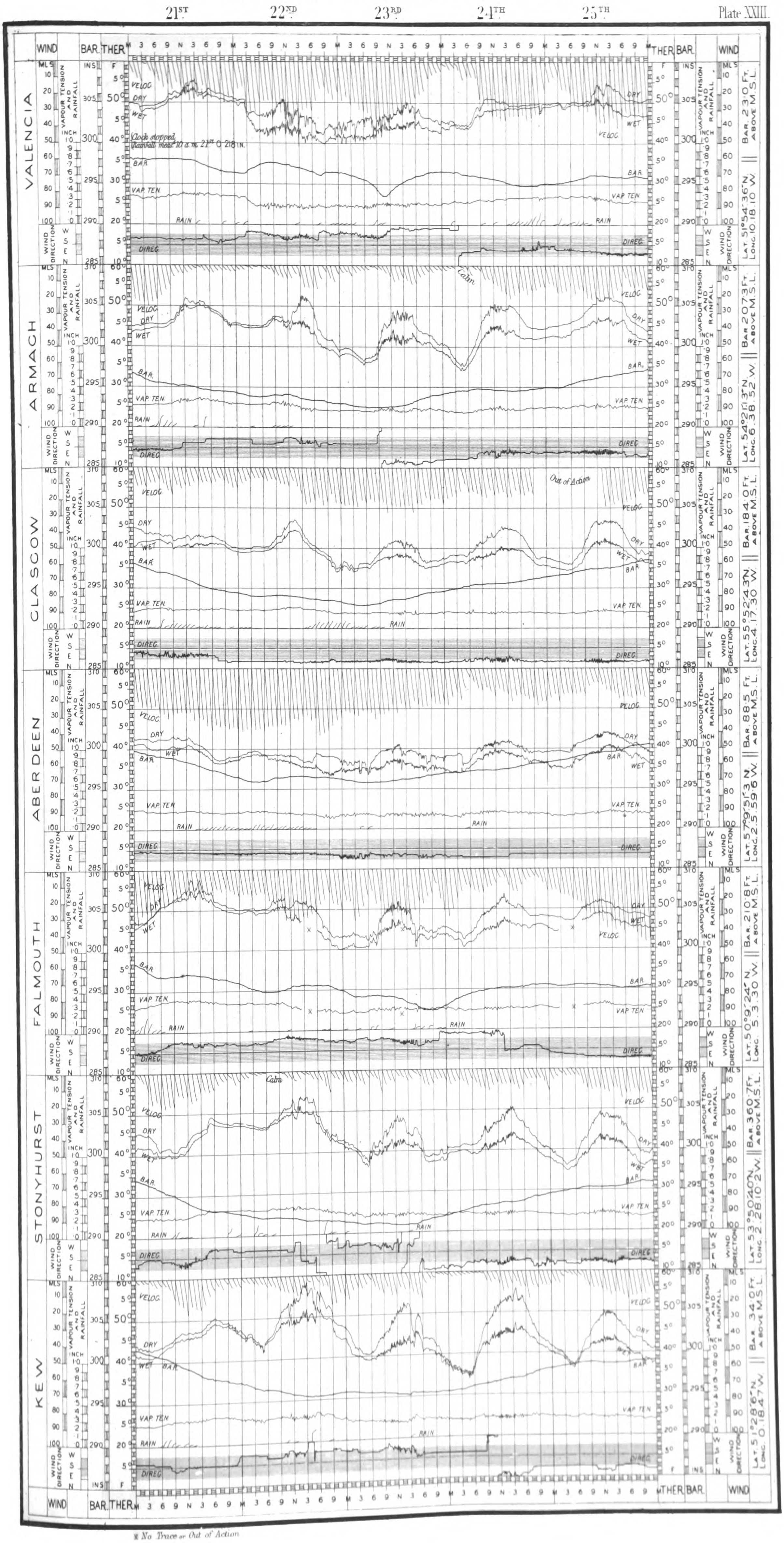
APRIL — 1877.

Plate XXIII.



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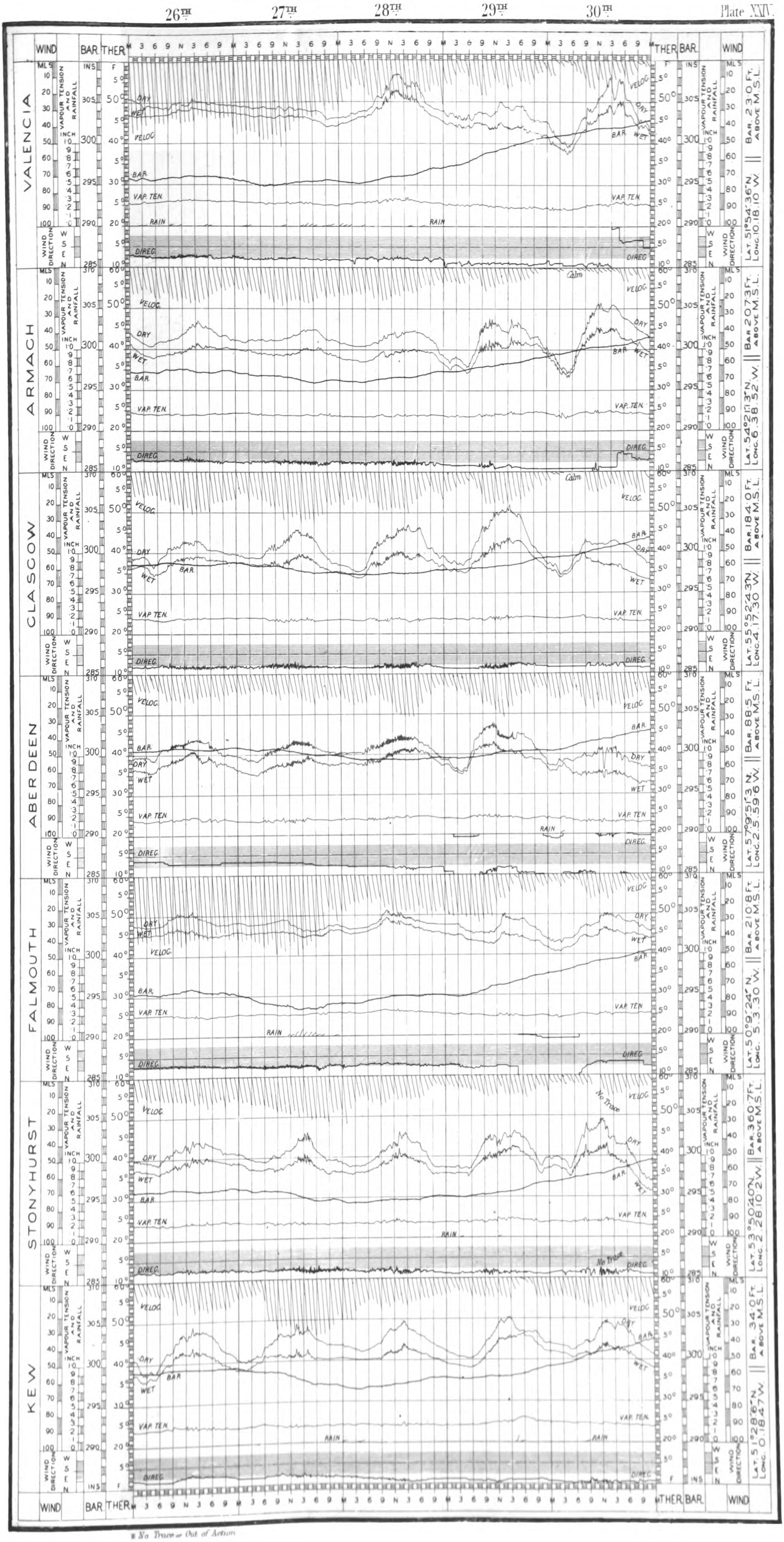
A P R I L — 1877.

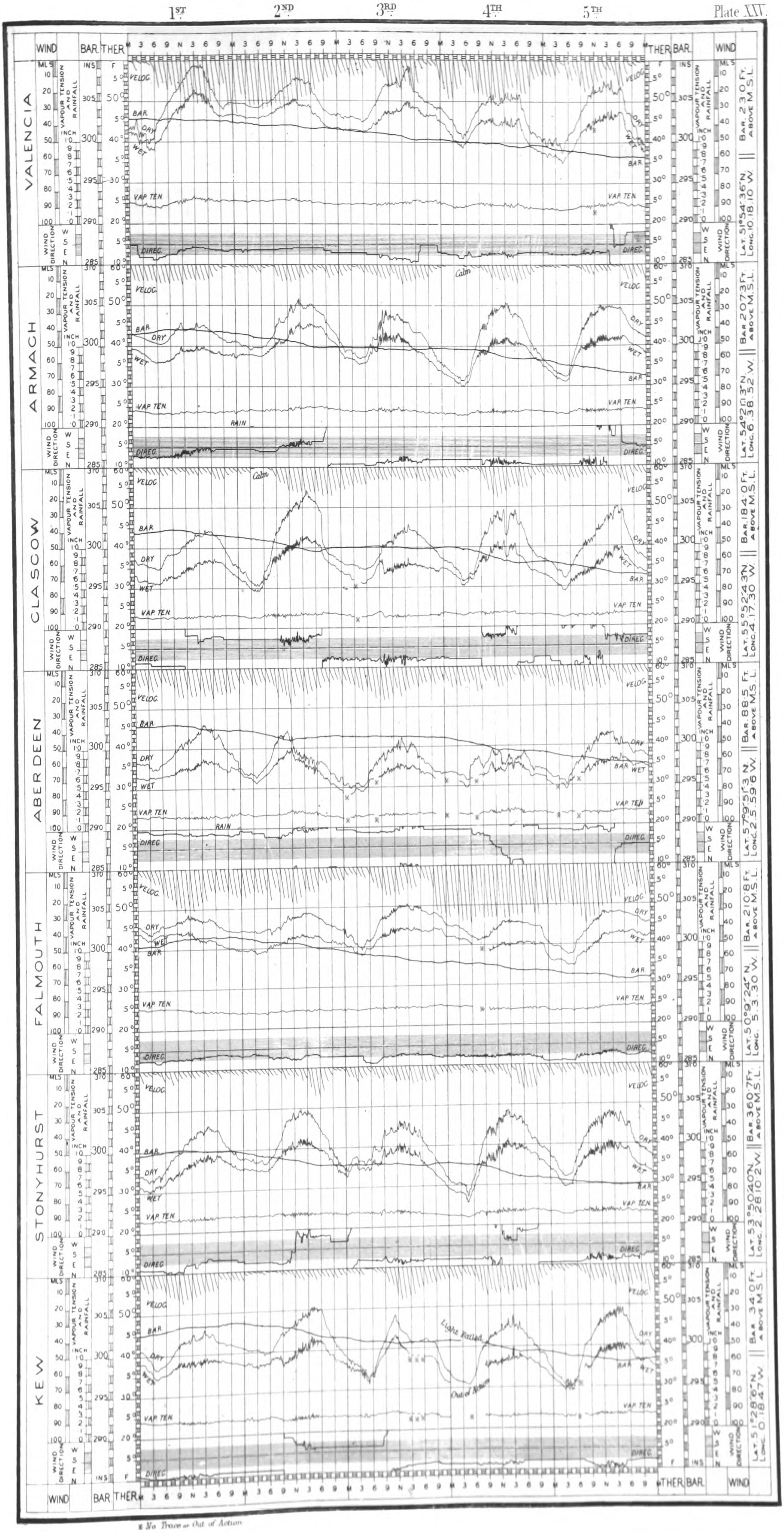
Plate XXIV.



* No Trace or Out of Action

M A Y — 1877.

Plate XXV.



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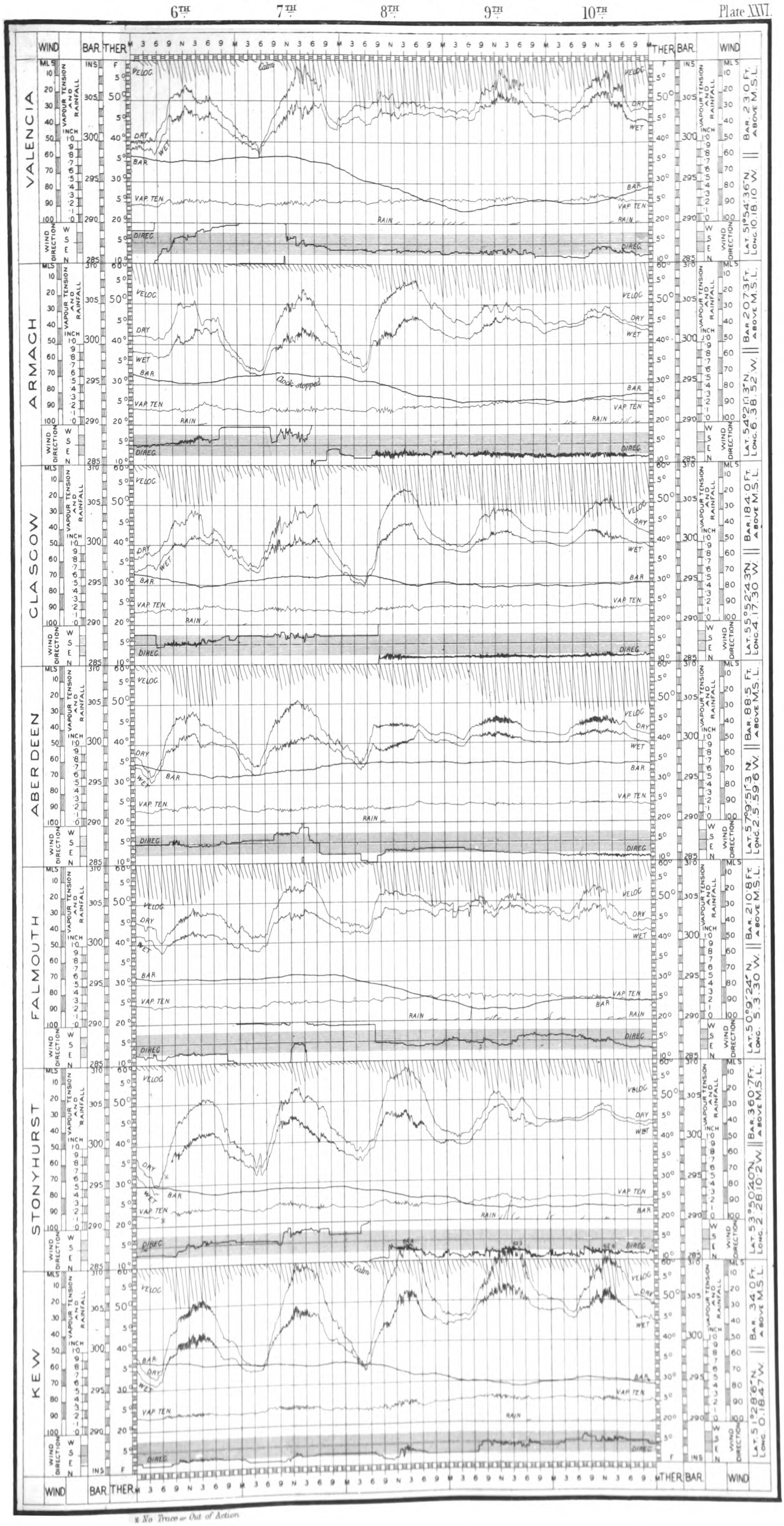
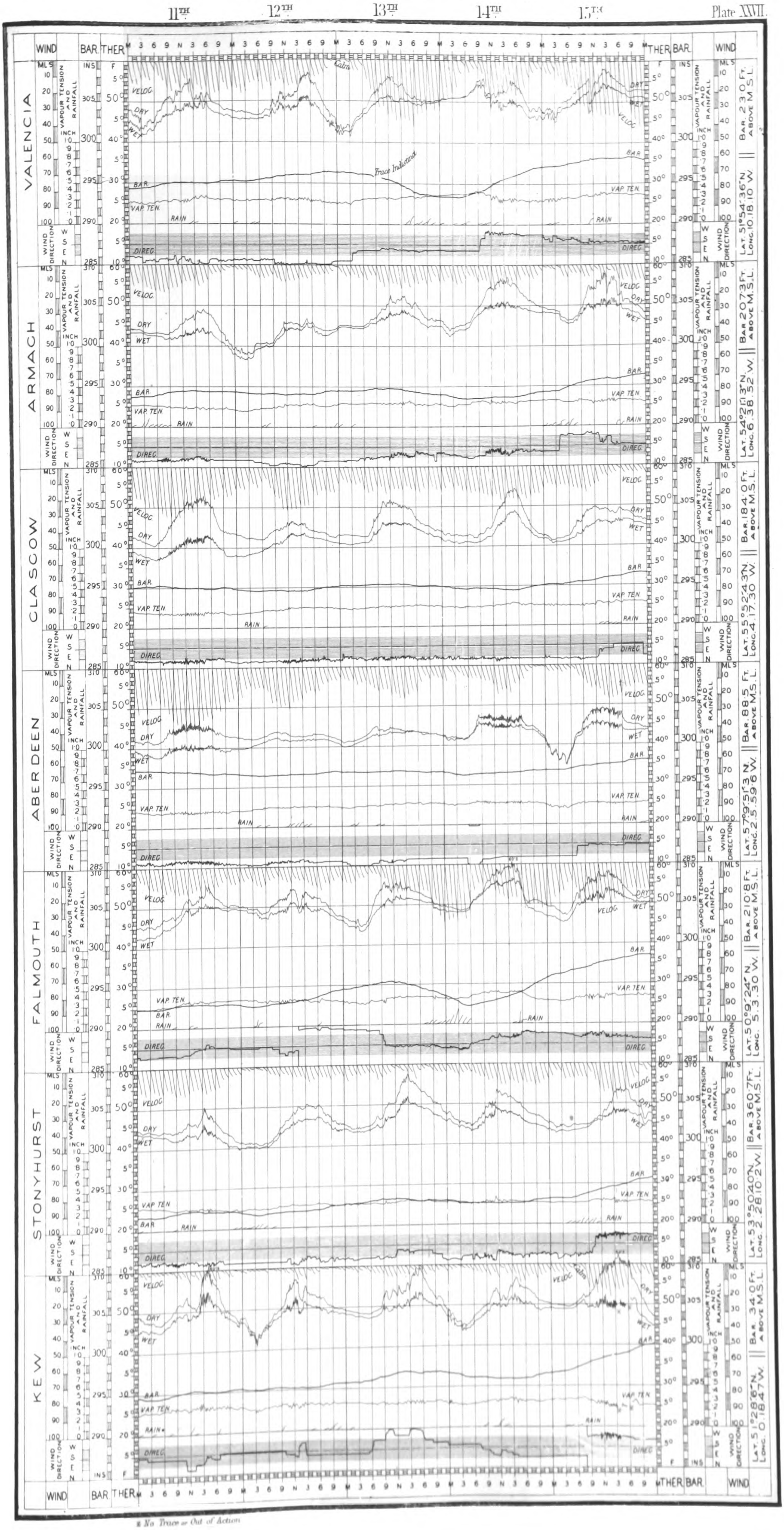
M A Y —— 1 8 7 7.



x No Trace — Out of Action

MAY — 1877.

Plate XXVII.



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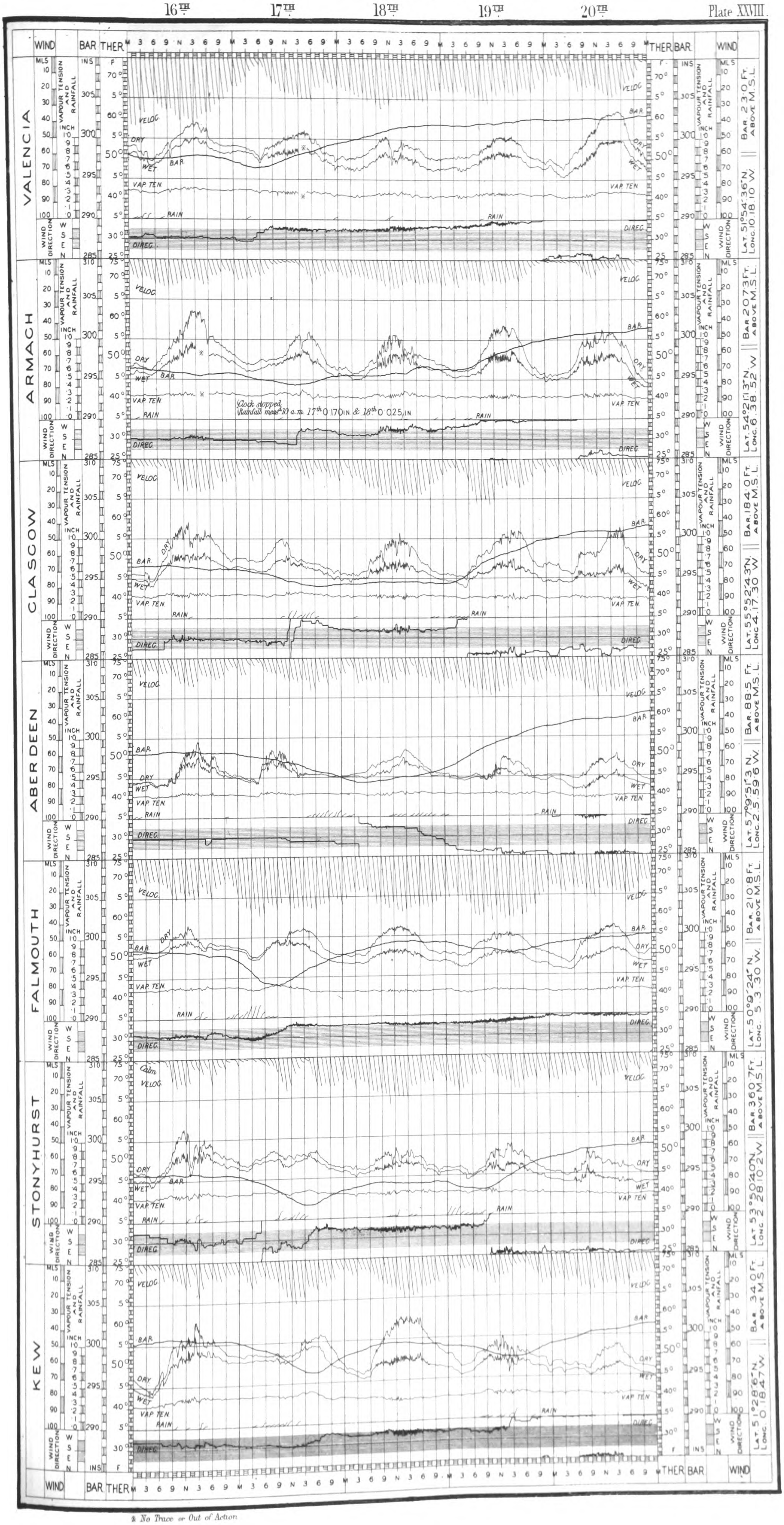
M A Y —— 1877.

Plate XXVIII.



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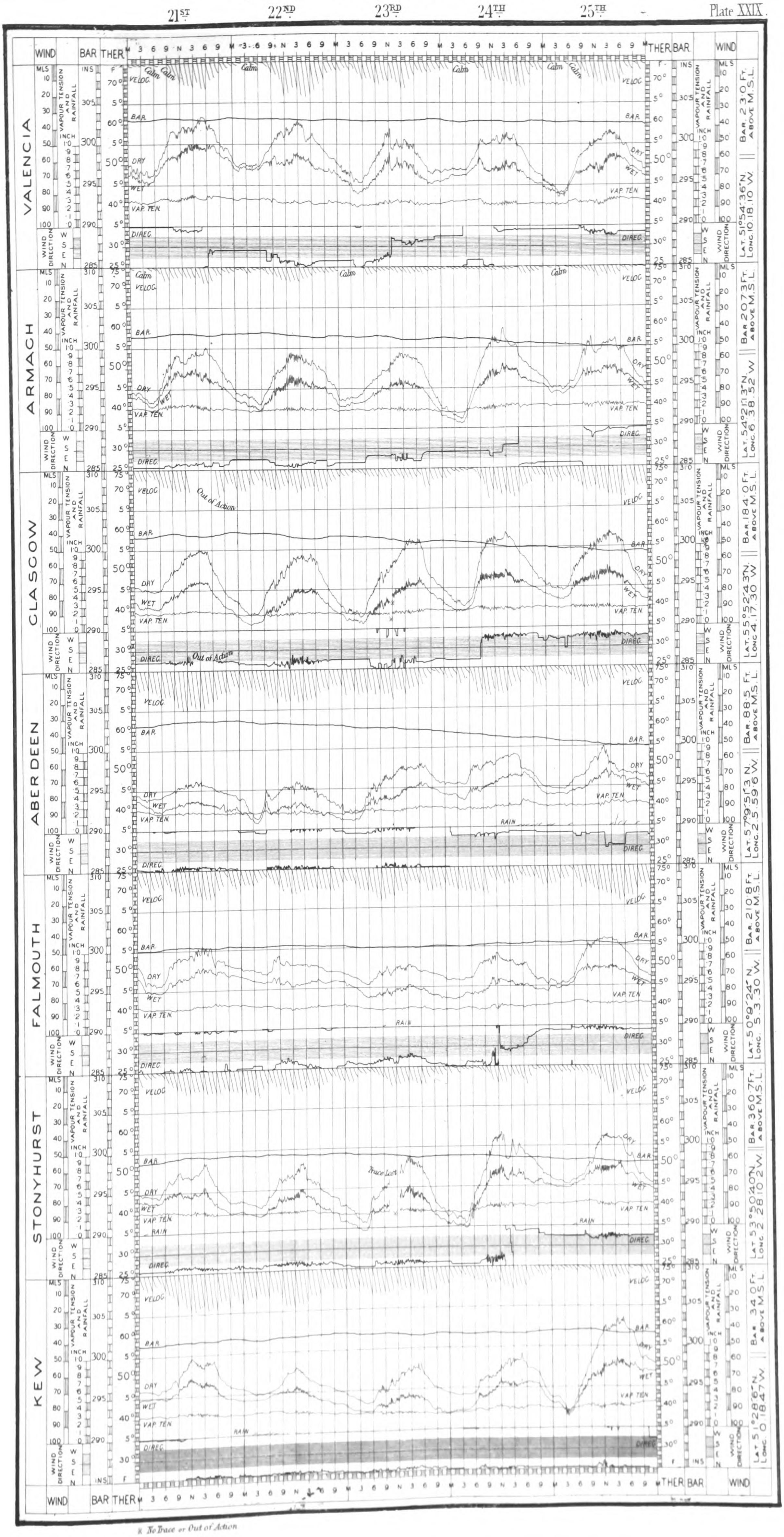
M A Y — 1877.

Plate XXIX.



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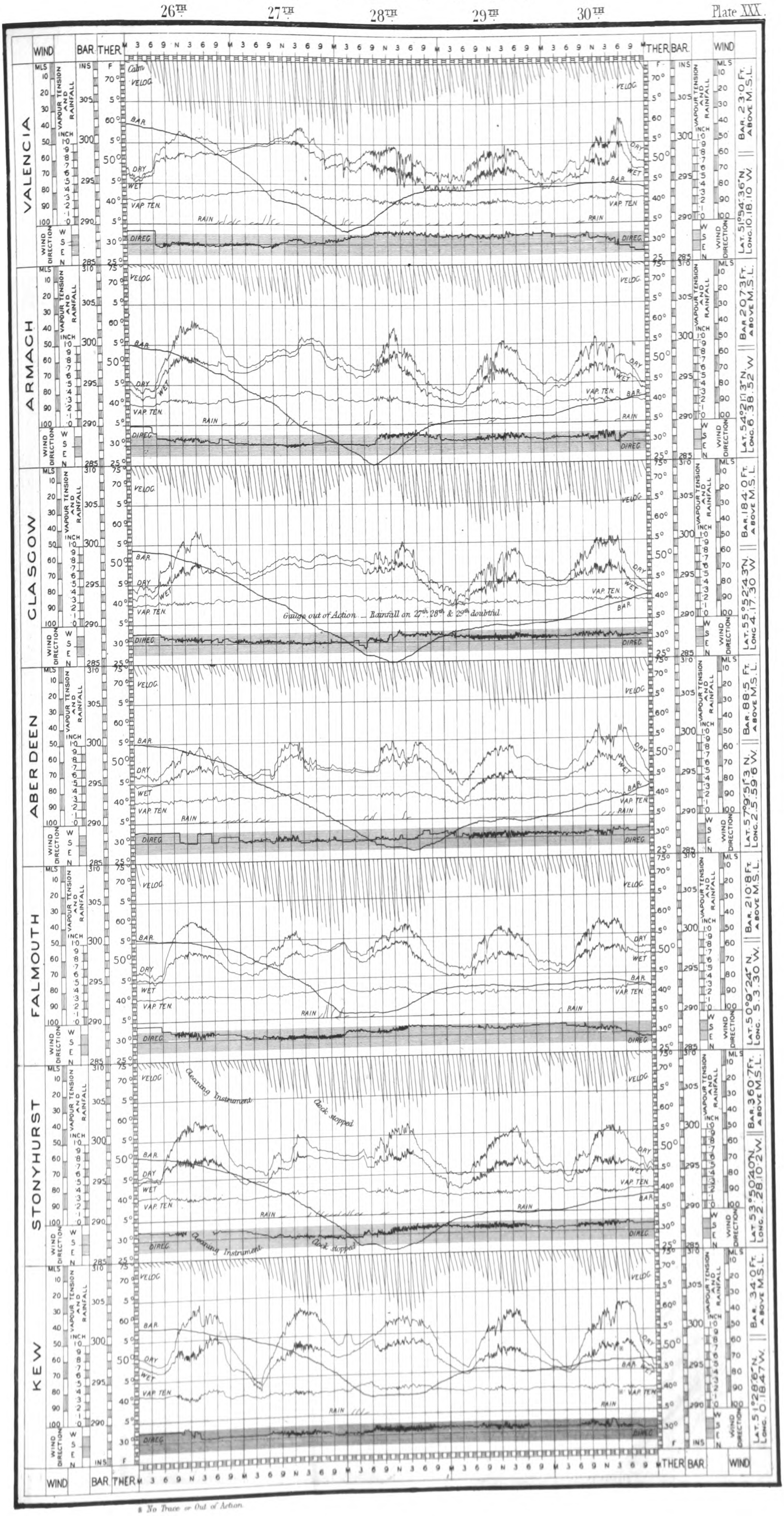
MAY — 1877.

Plate XXX.

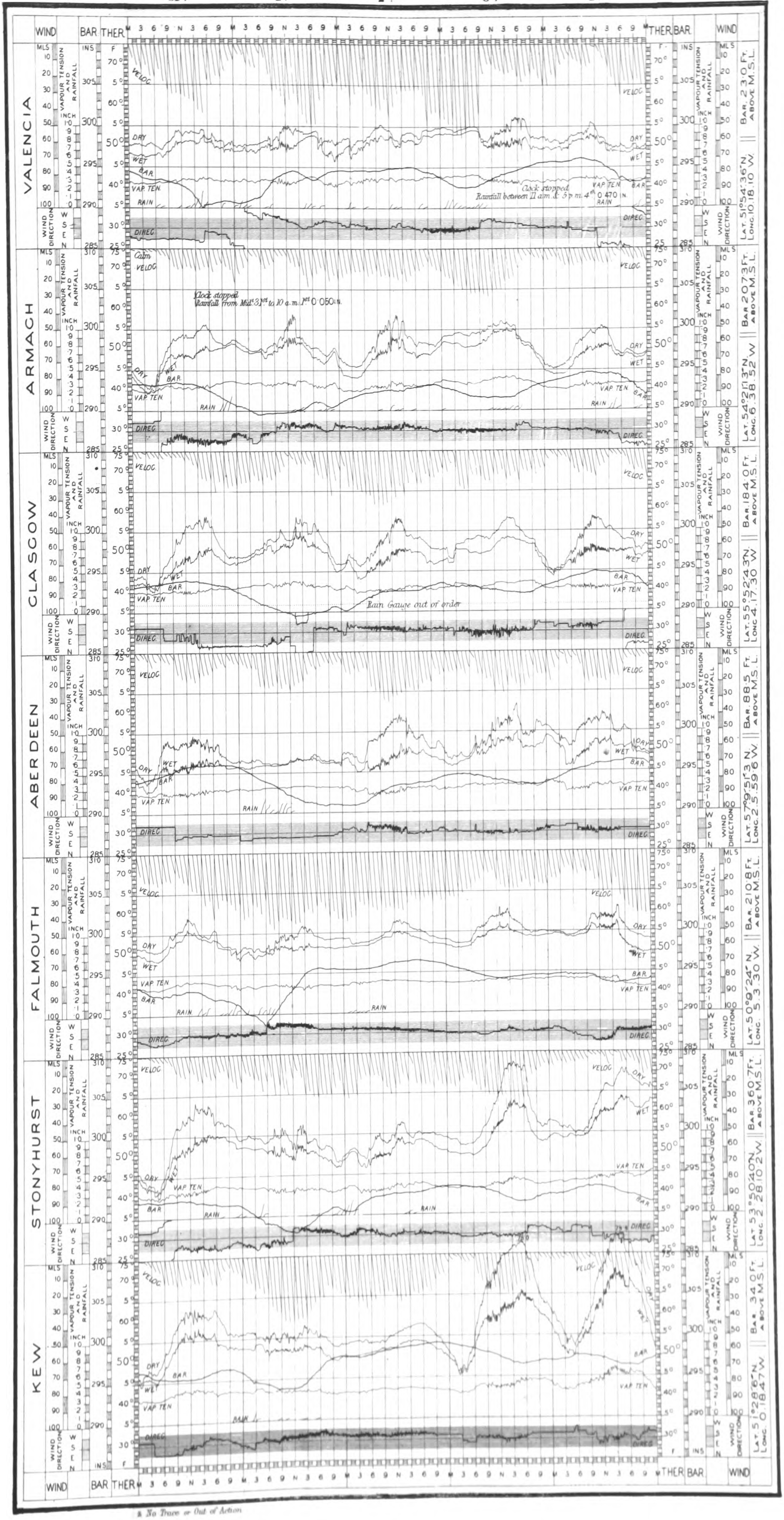


§ No Trace or Out of Action.

MAY & JUNE — 1877.

31st 1st 2nd 3rd 4th

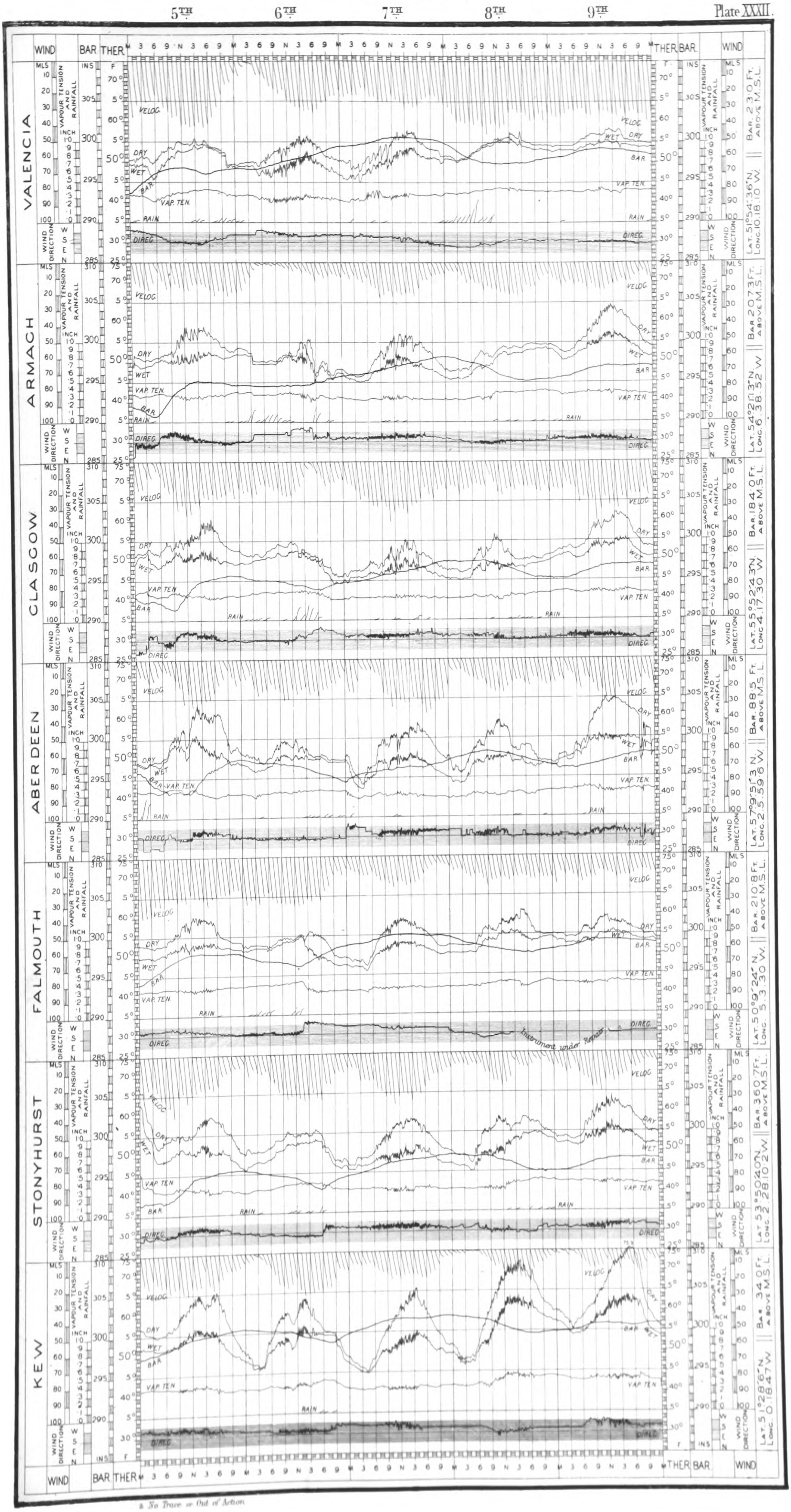
Plate XXXI.



★ No Trace or Out of Action

J U N E — 1 8 7 7.

Plate XXXII.



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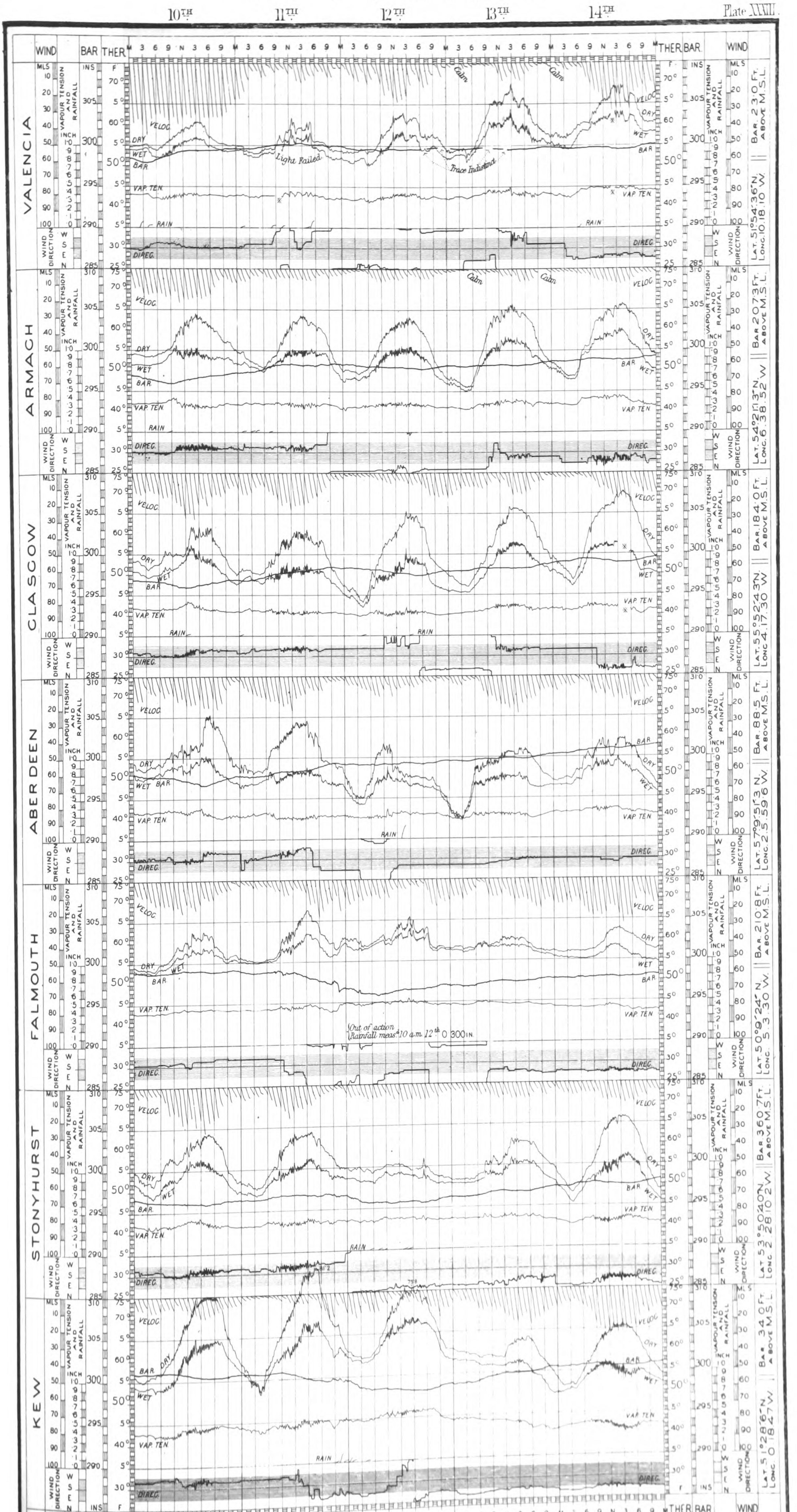
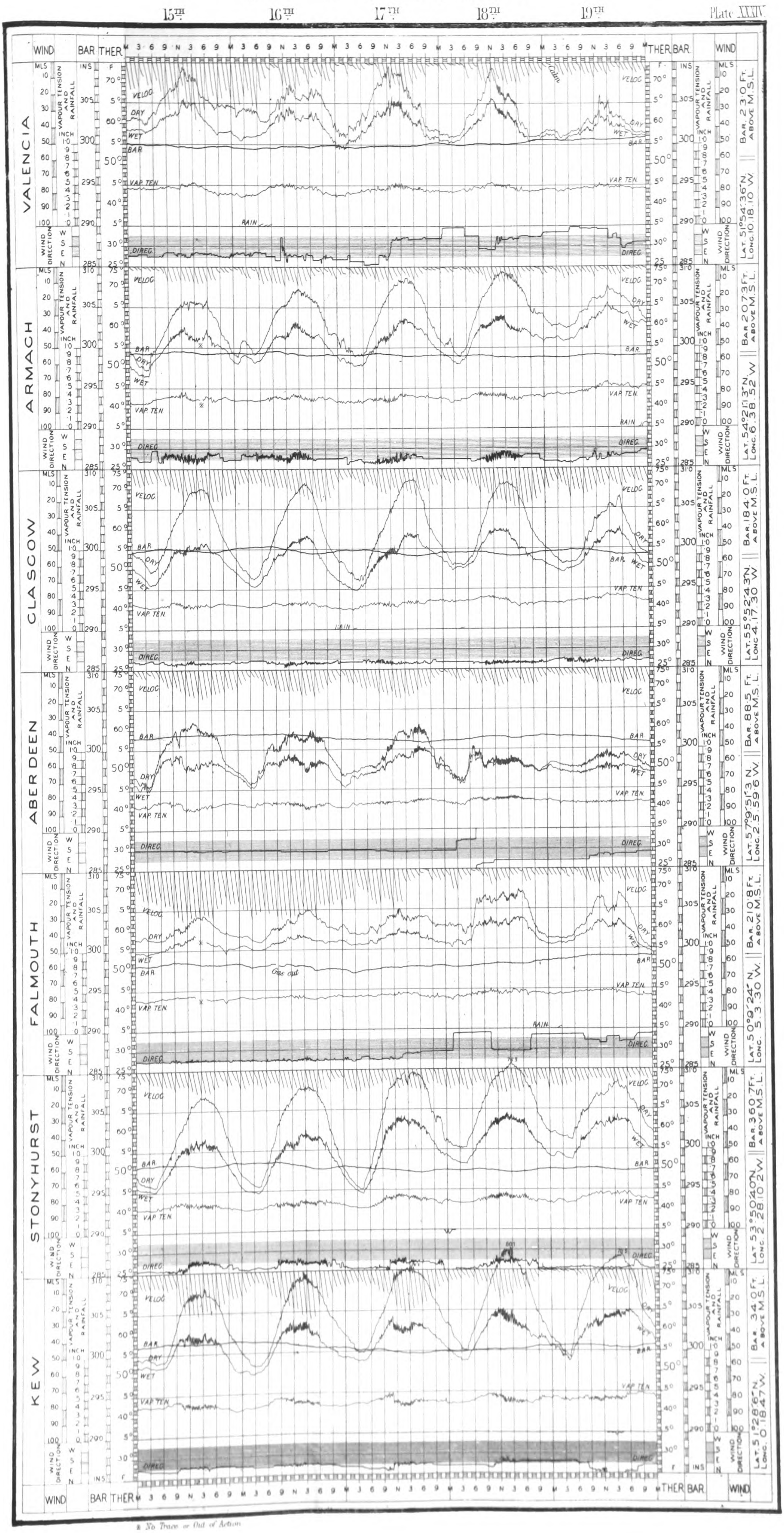
J U N E — 1 8 7 7.

Plate XXVII.



JUNE — 1877.



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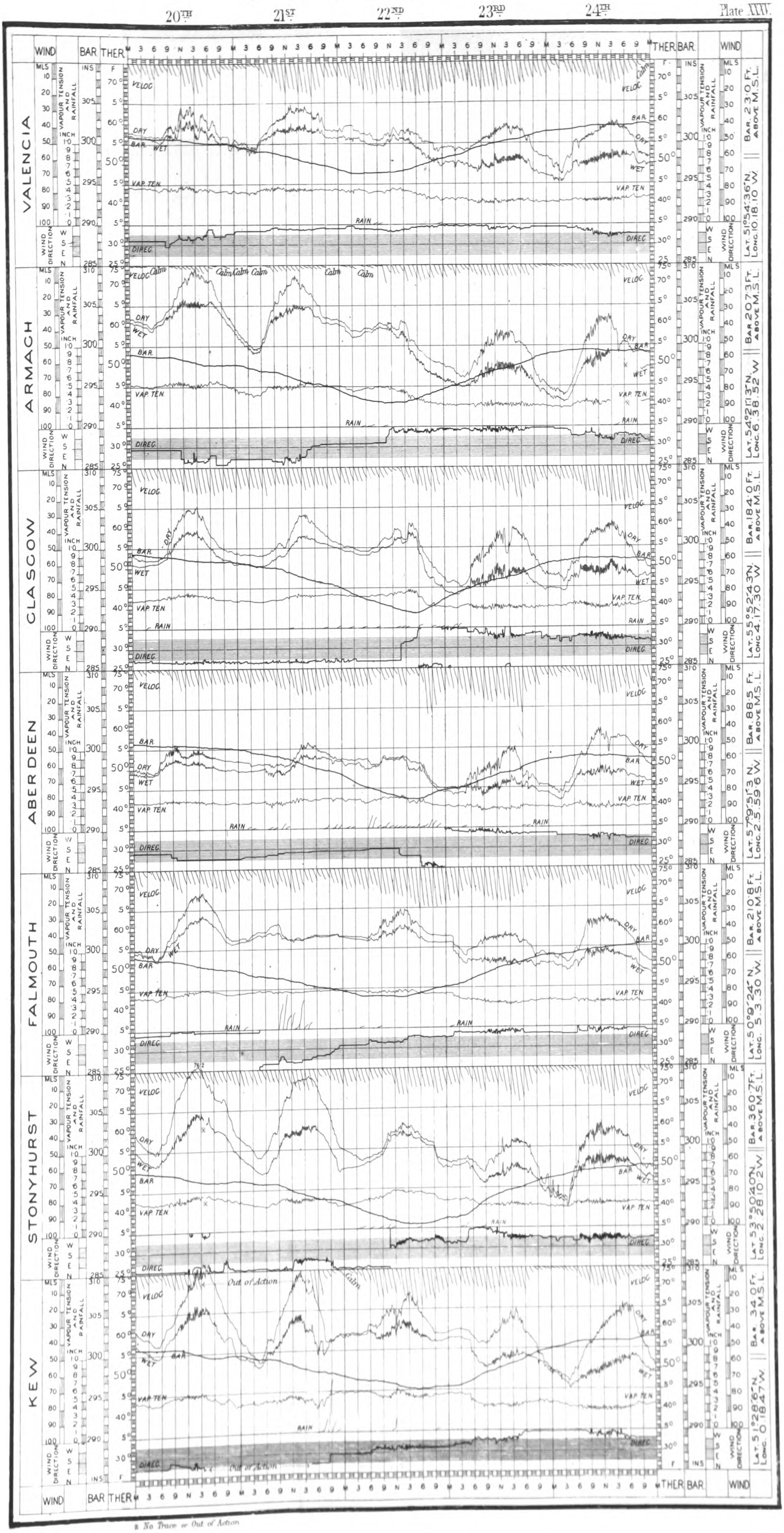
JUNE — 1877.

Plate XXV.



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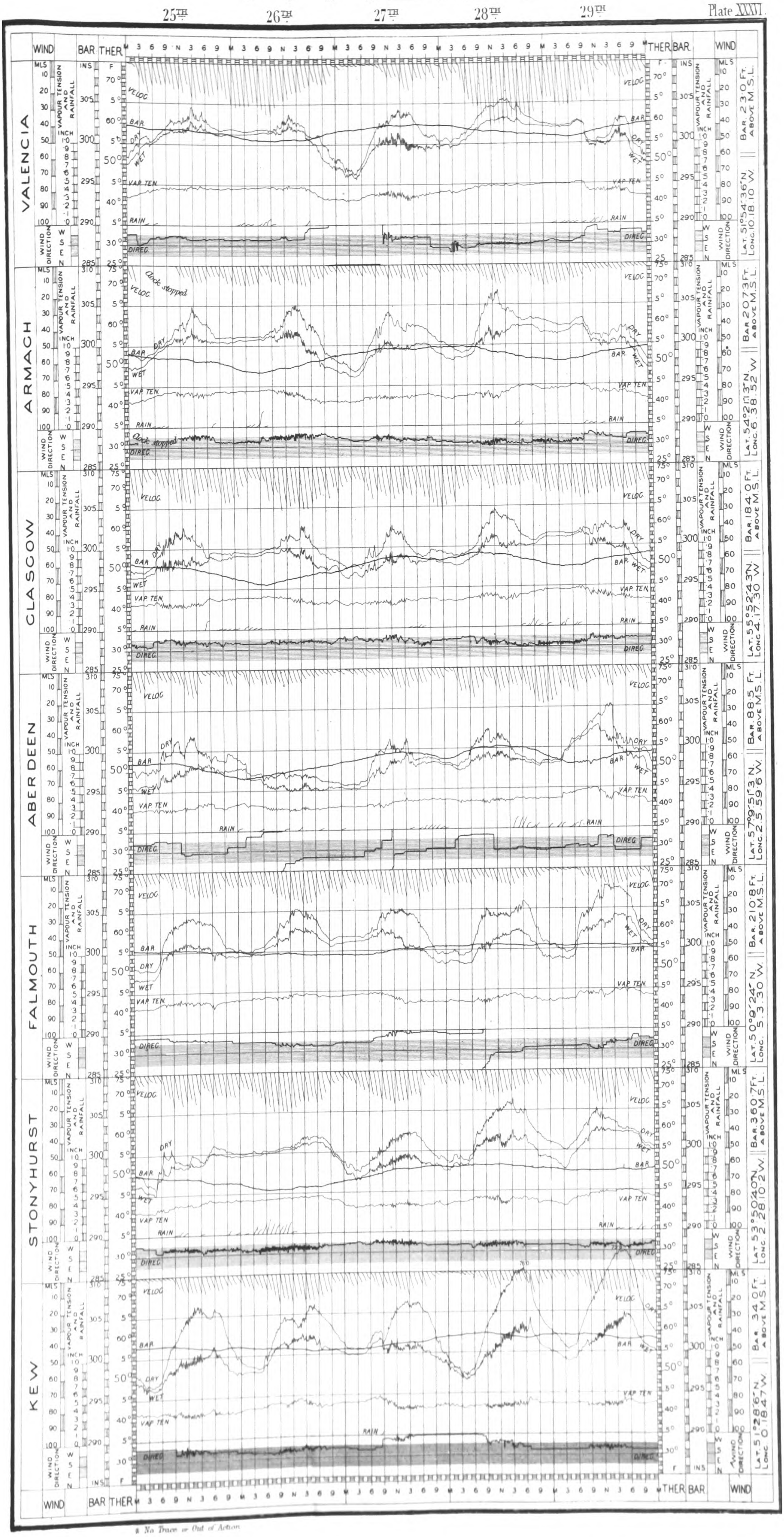
JUNE — 1877.



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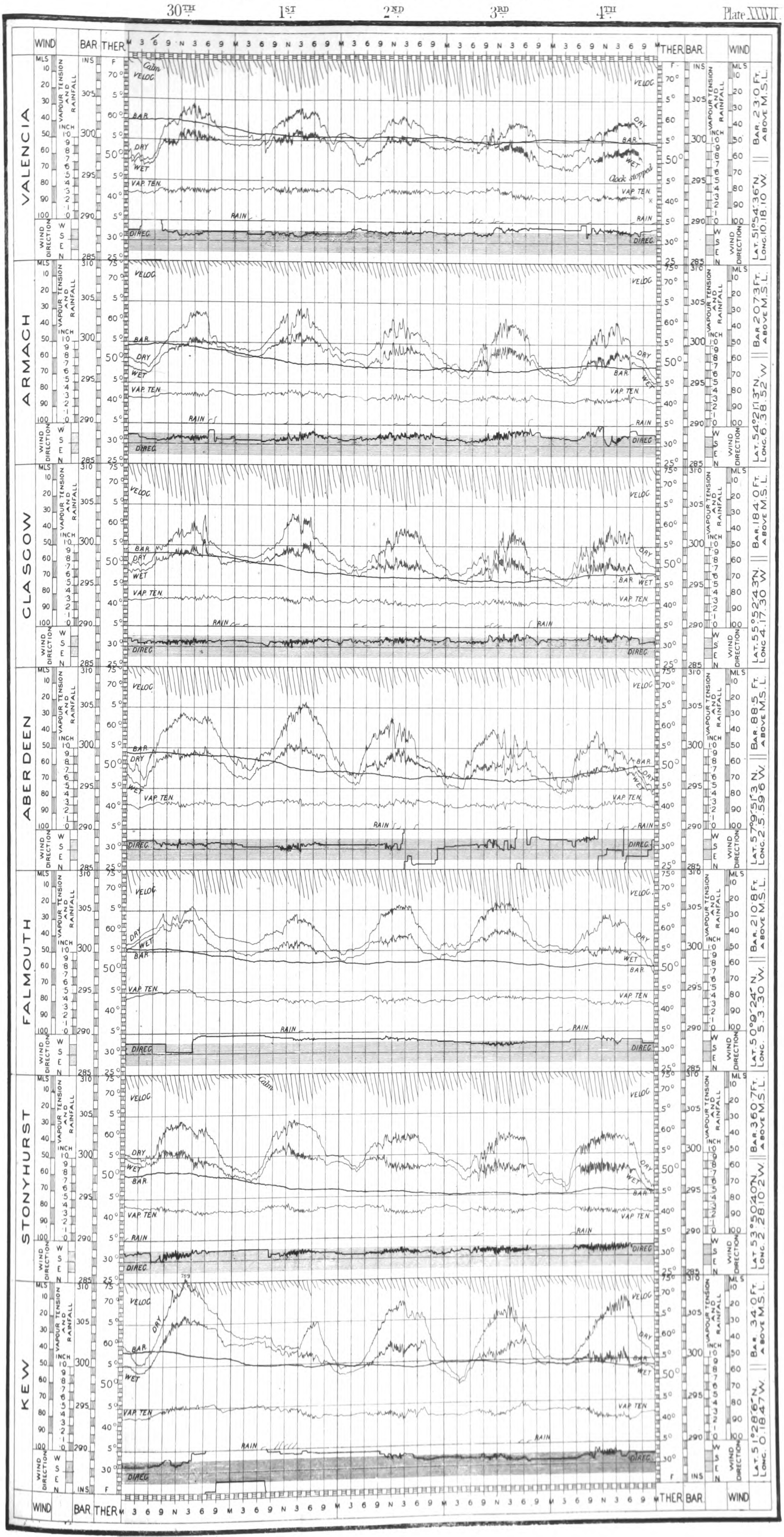
JUNE & JULY _ 1877.



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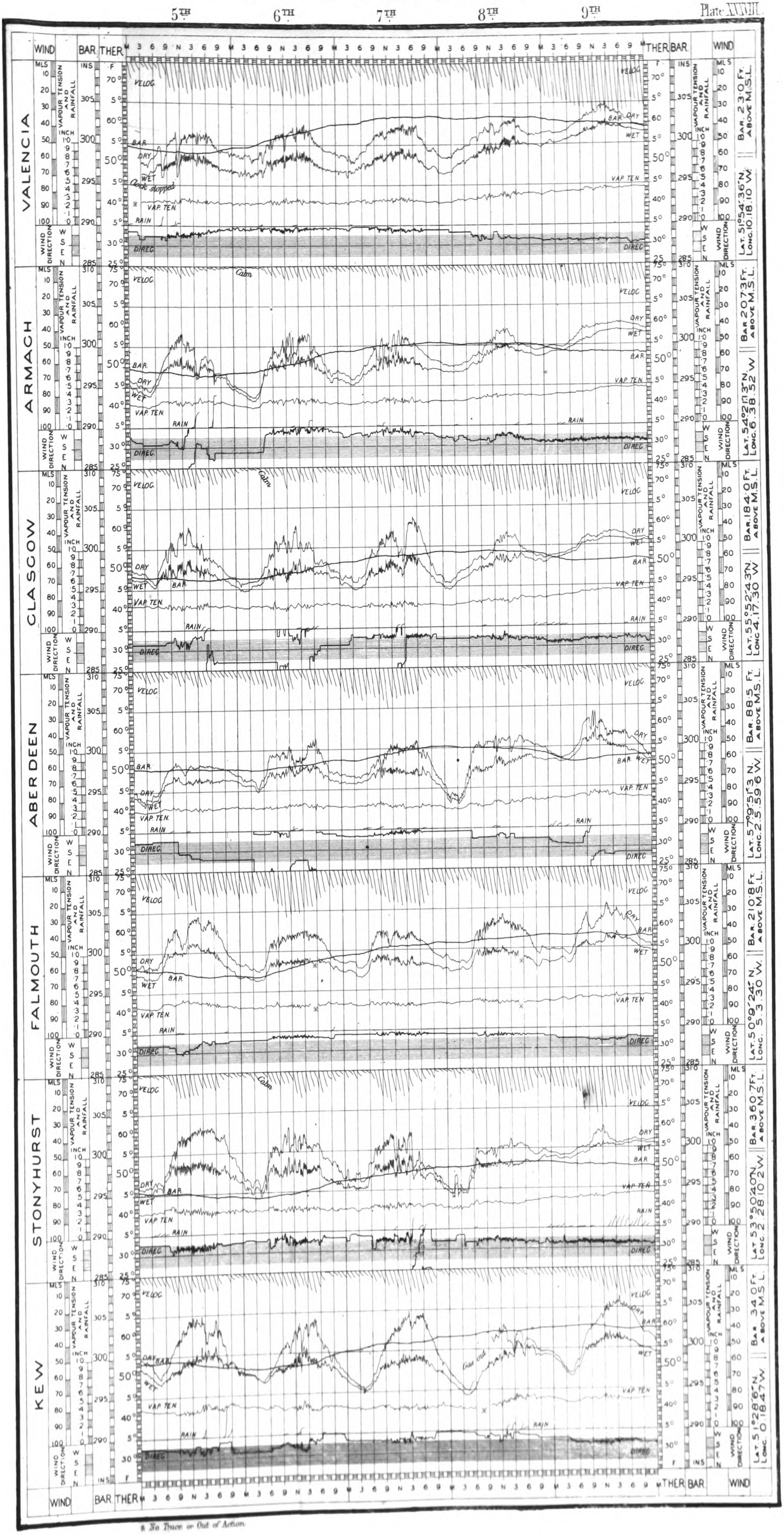
J U L Y — 1 8 7 7.

Plate XXVIII.



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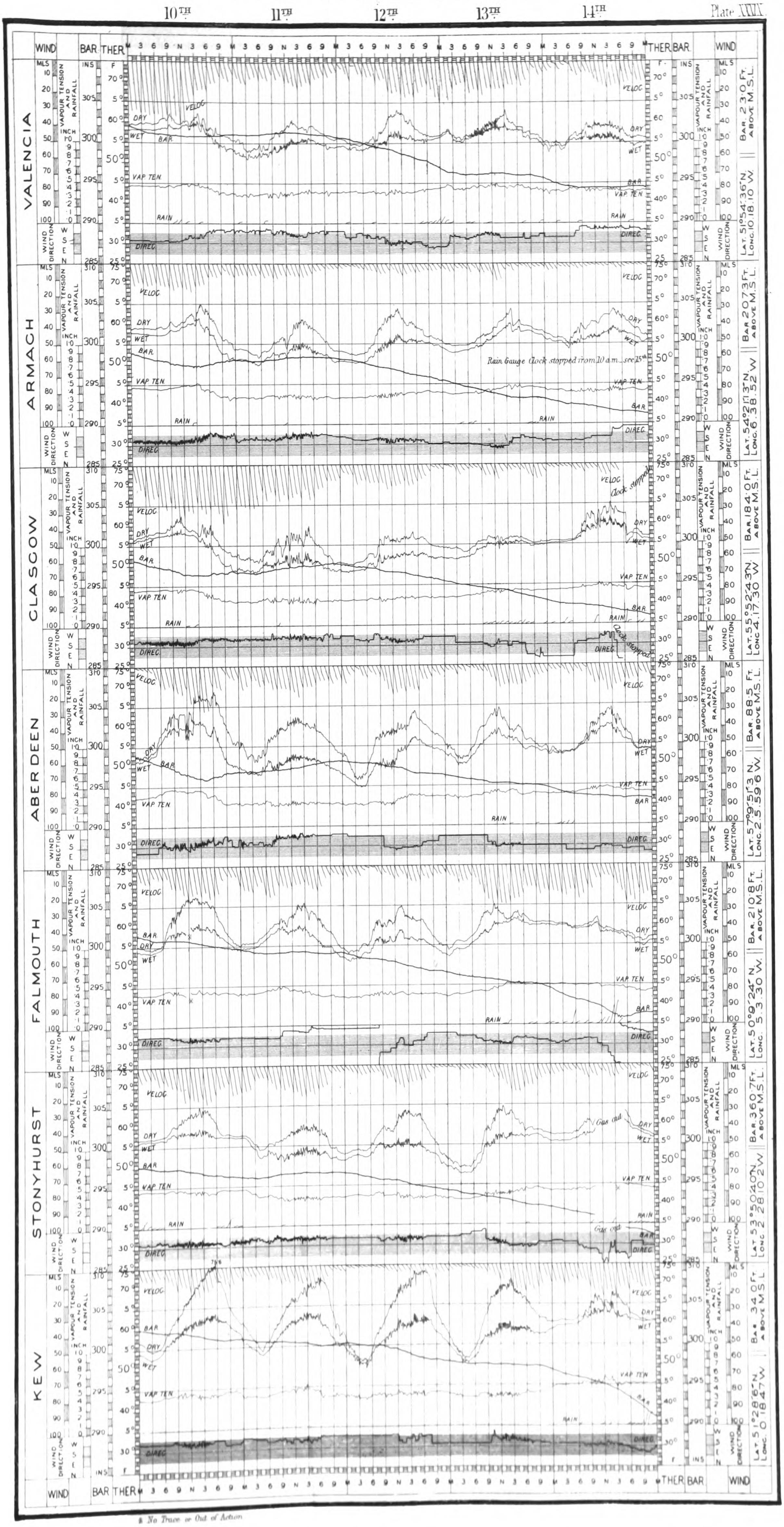
JULY — 1877.

Plate XXIX.



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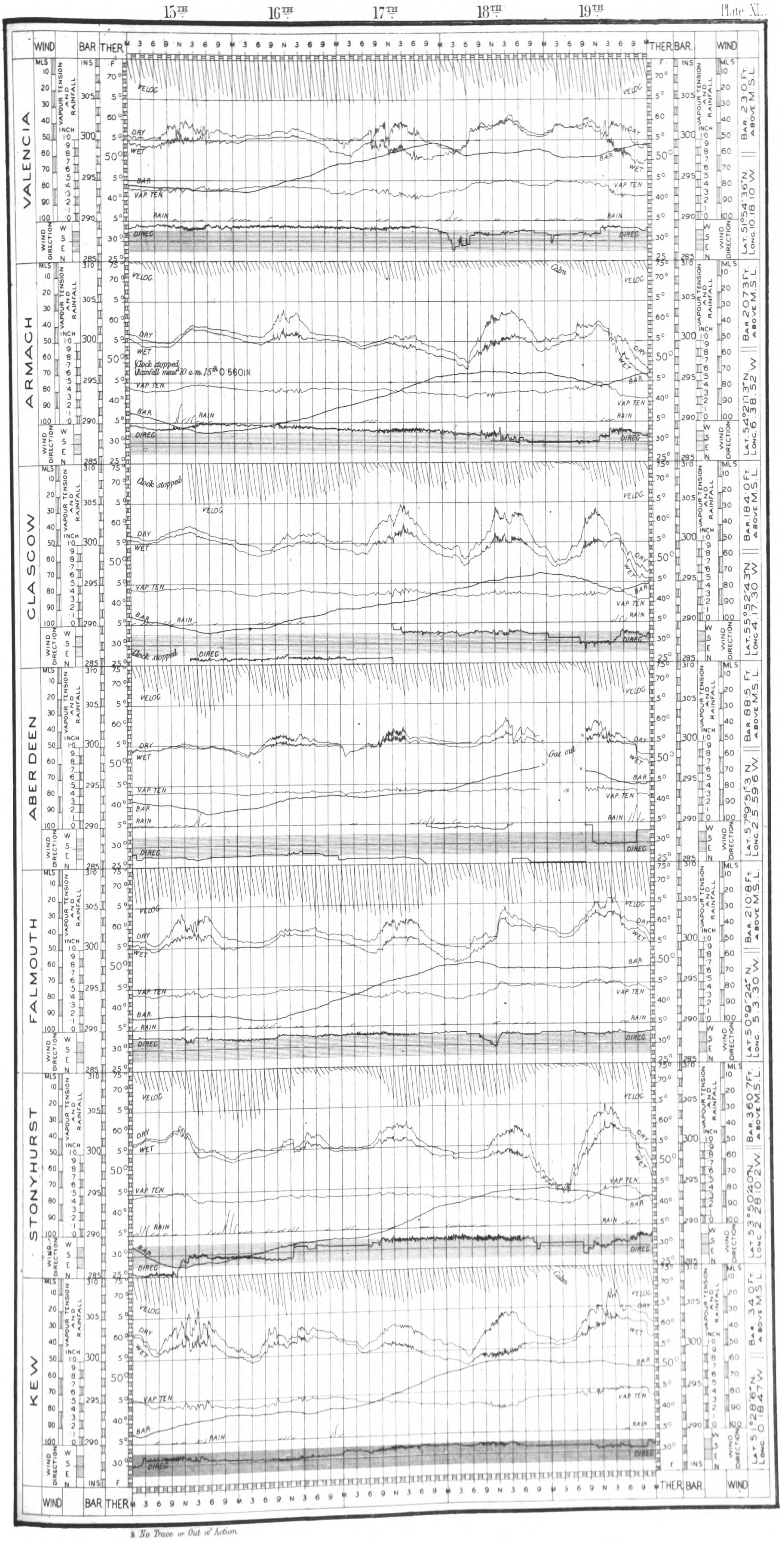
JULY — 1877.



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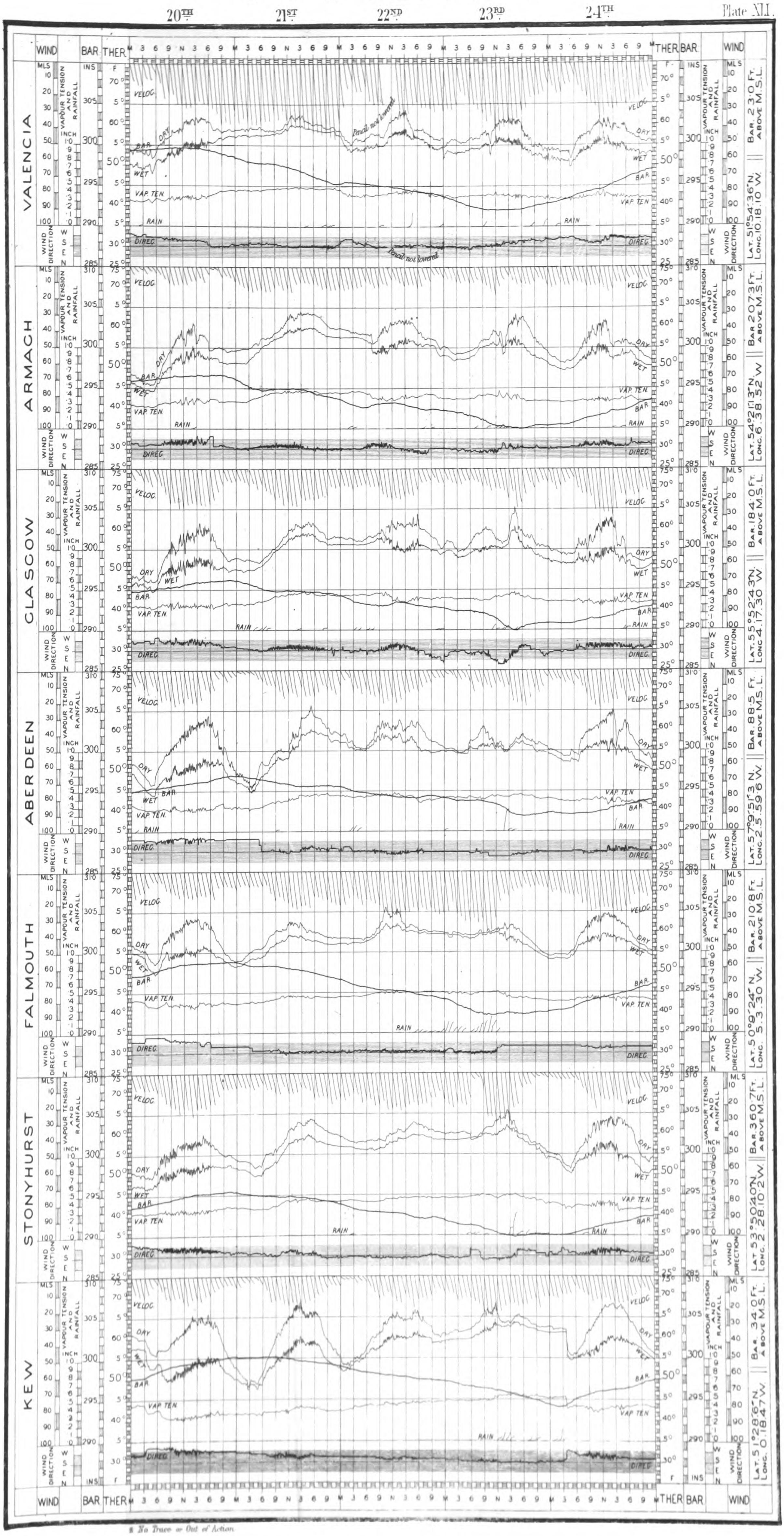
JULY — 1877.

Plate XLI.



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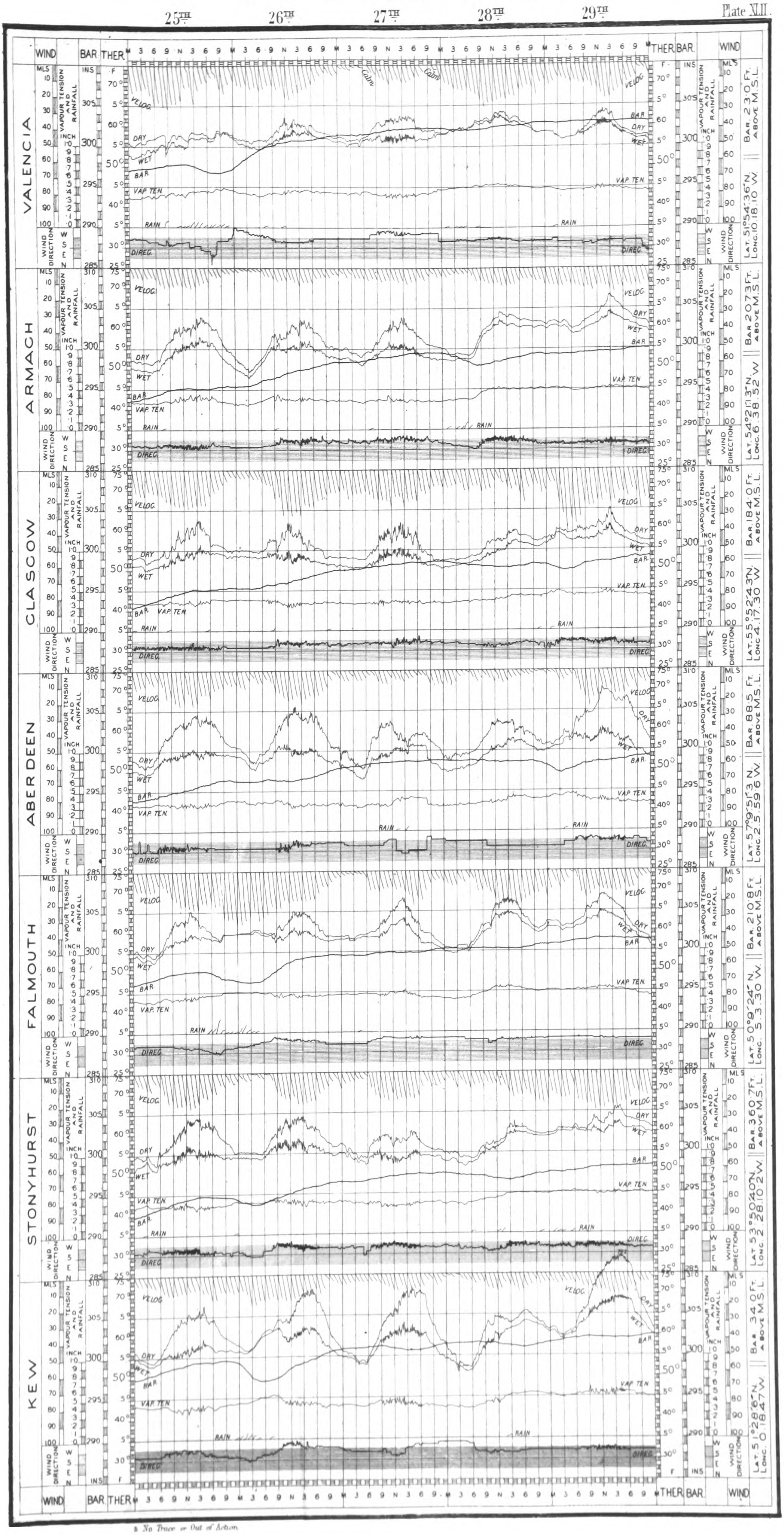
JULY — 1877.

Plate XLII.



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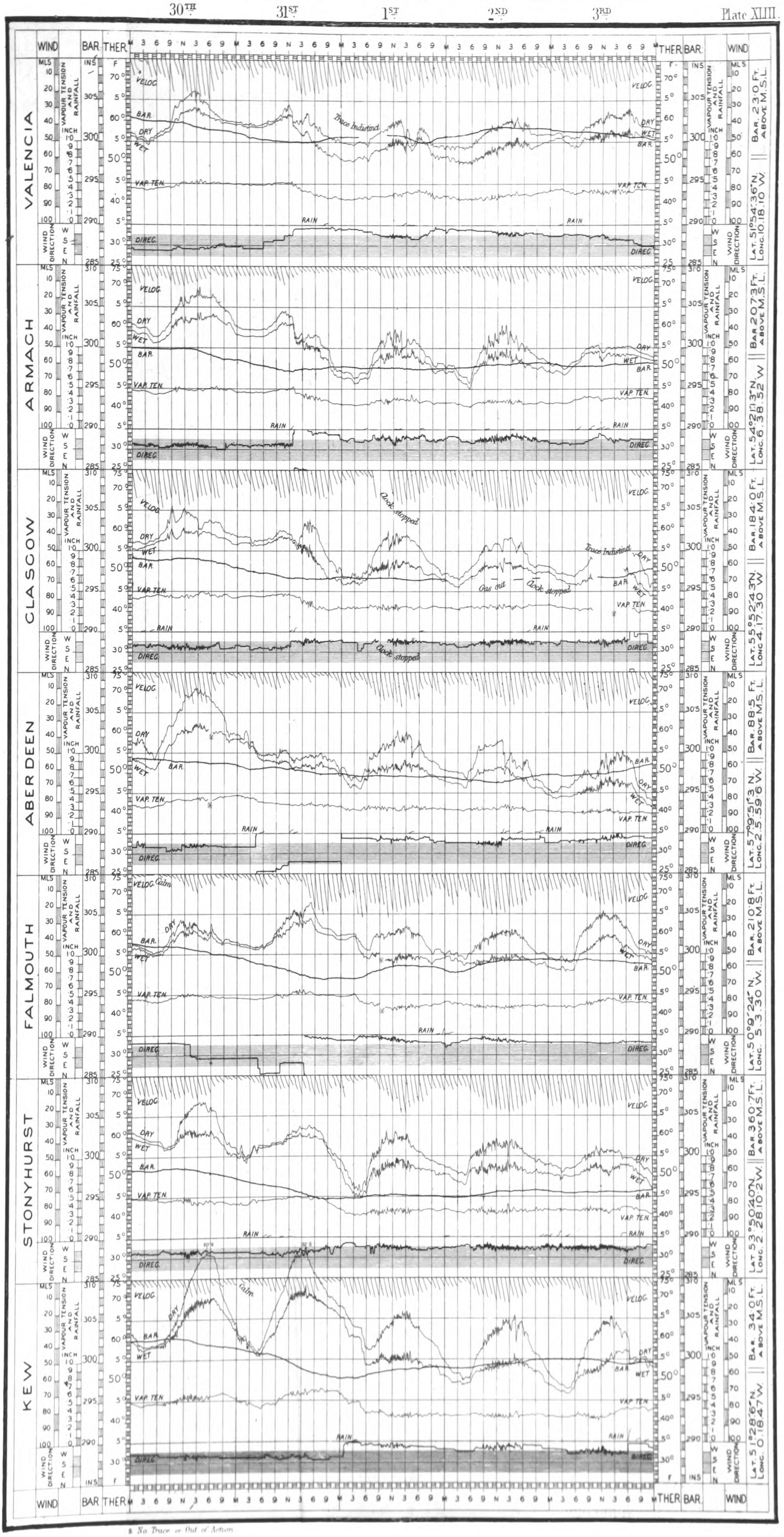
JULY & AUGUST — 1877.



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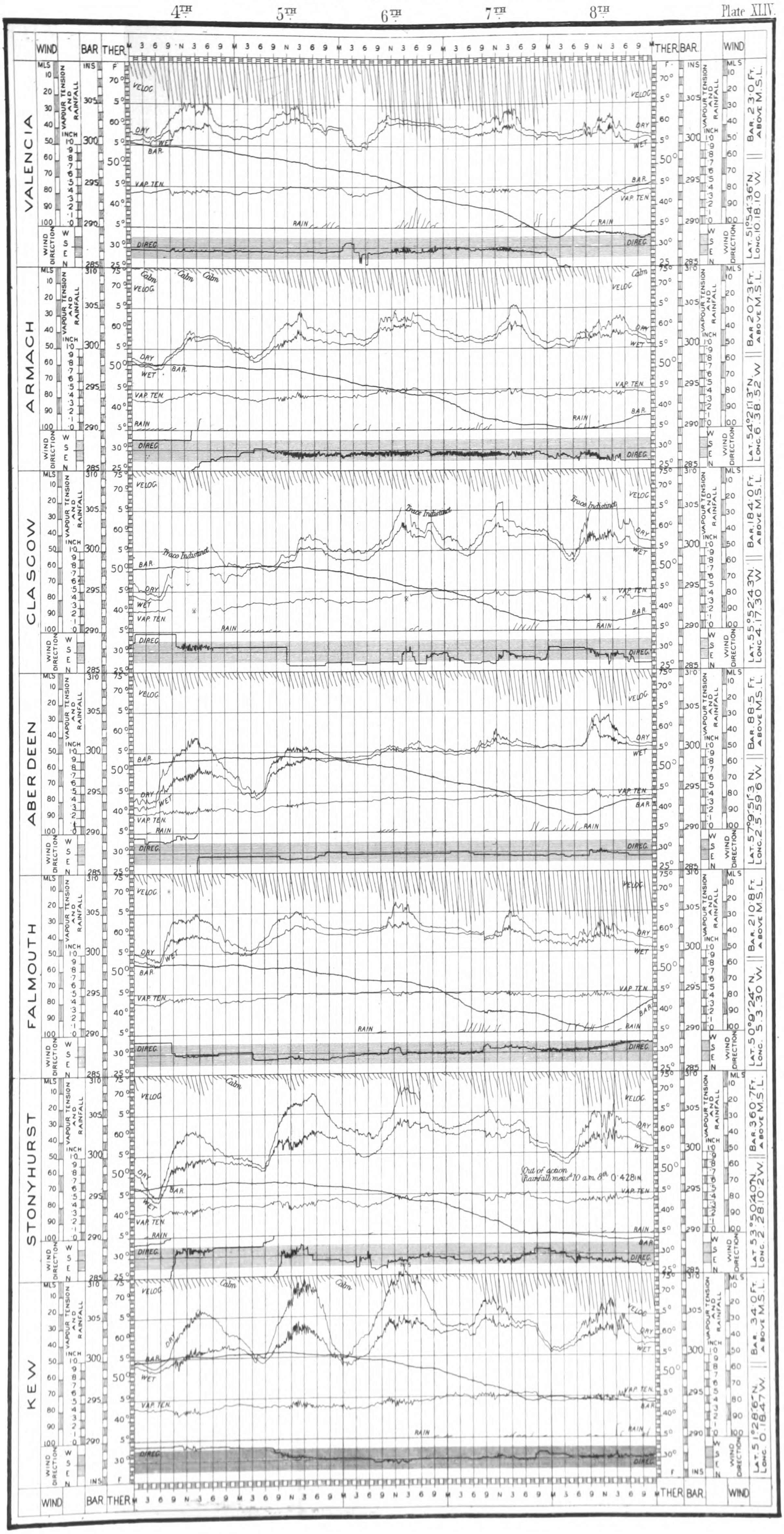
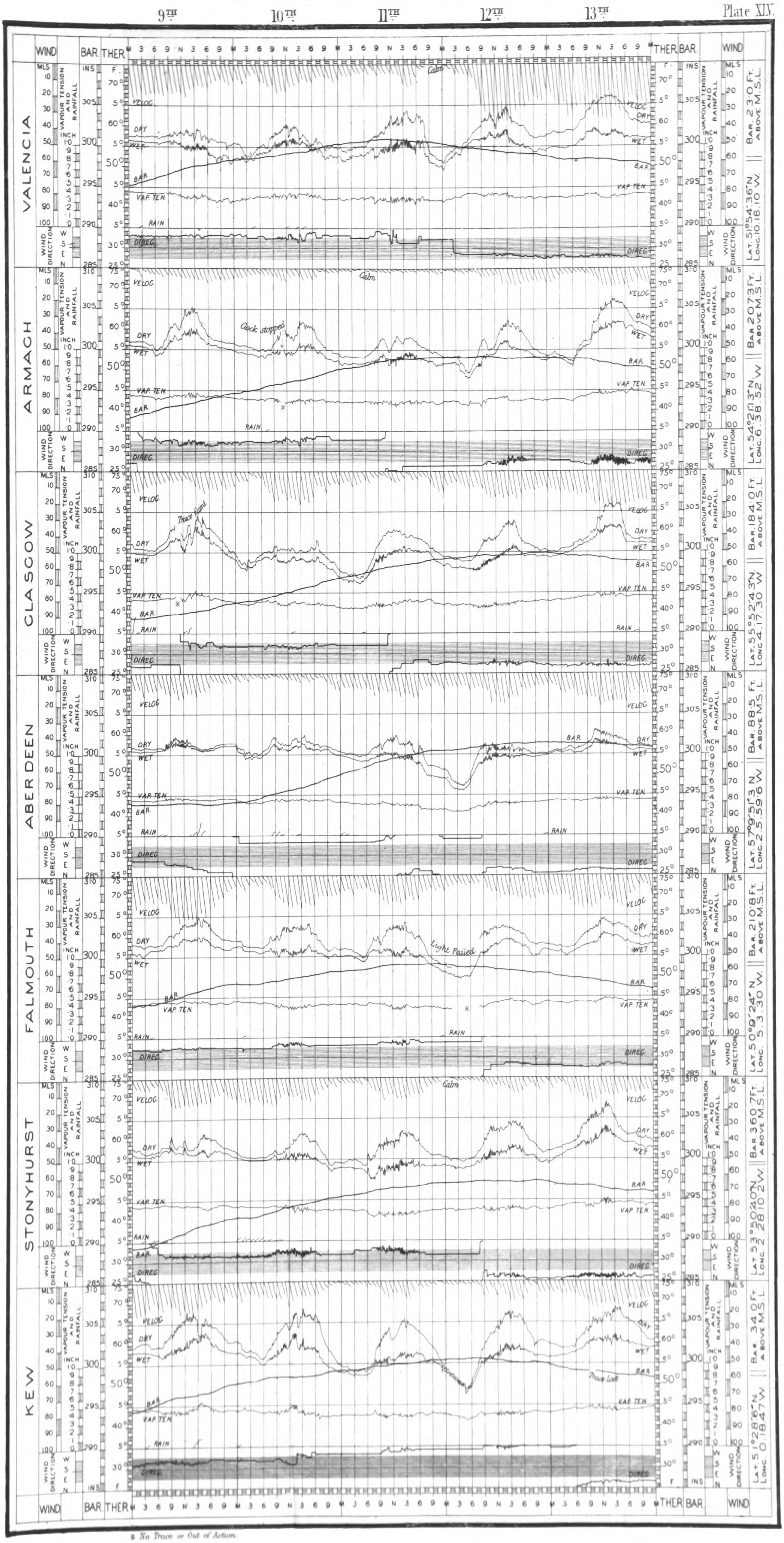
AUGUST — 1877.

Plate XLIV.



AUGUST — 1877.

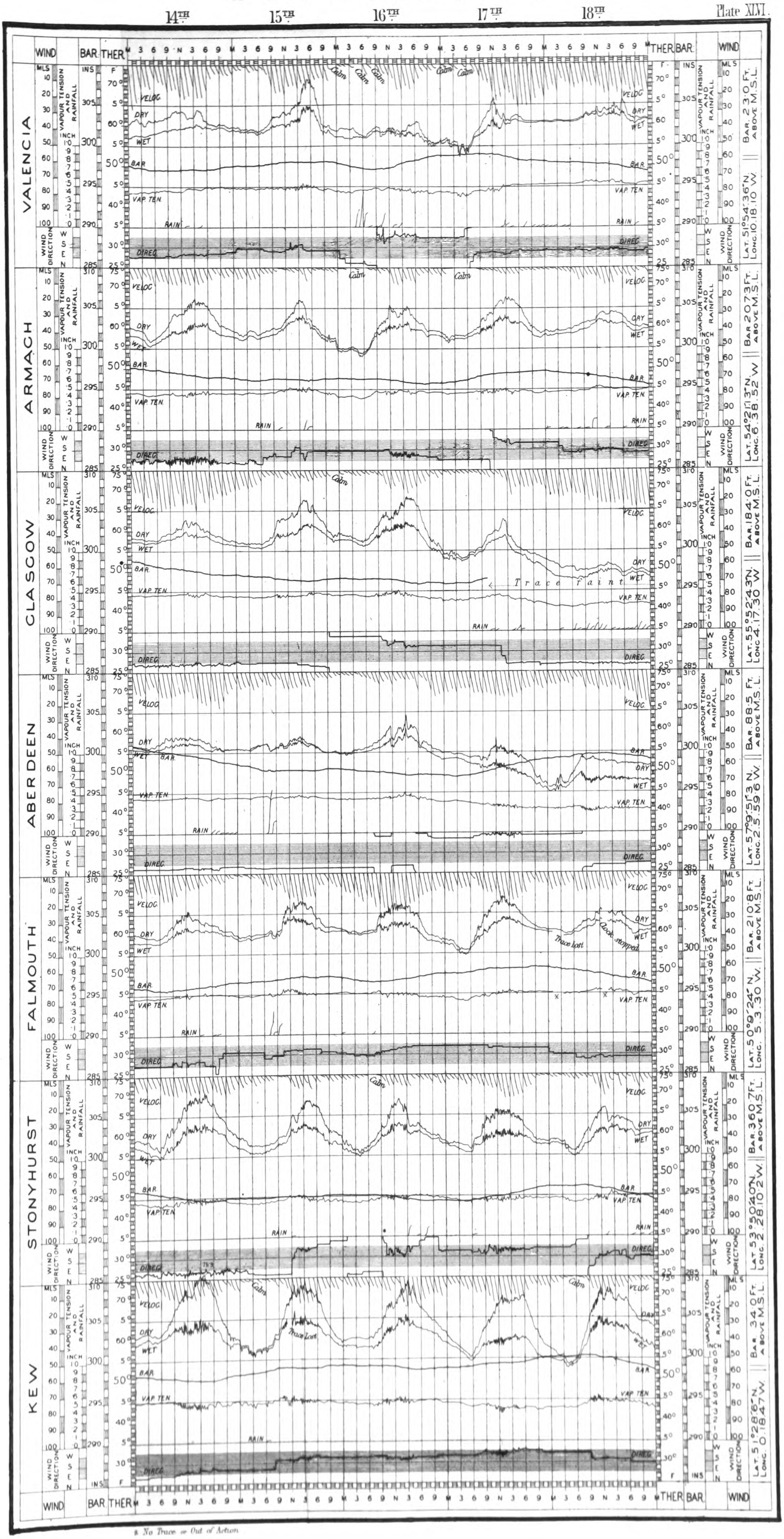
Plate XLV.



* No Trace or Out of Action.

AUGUST — 1877.

Plate XLVI.



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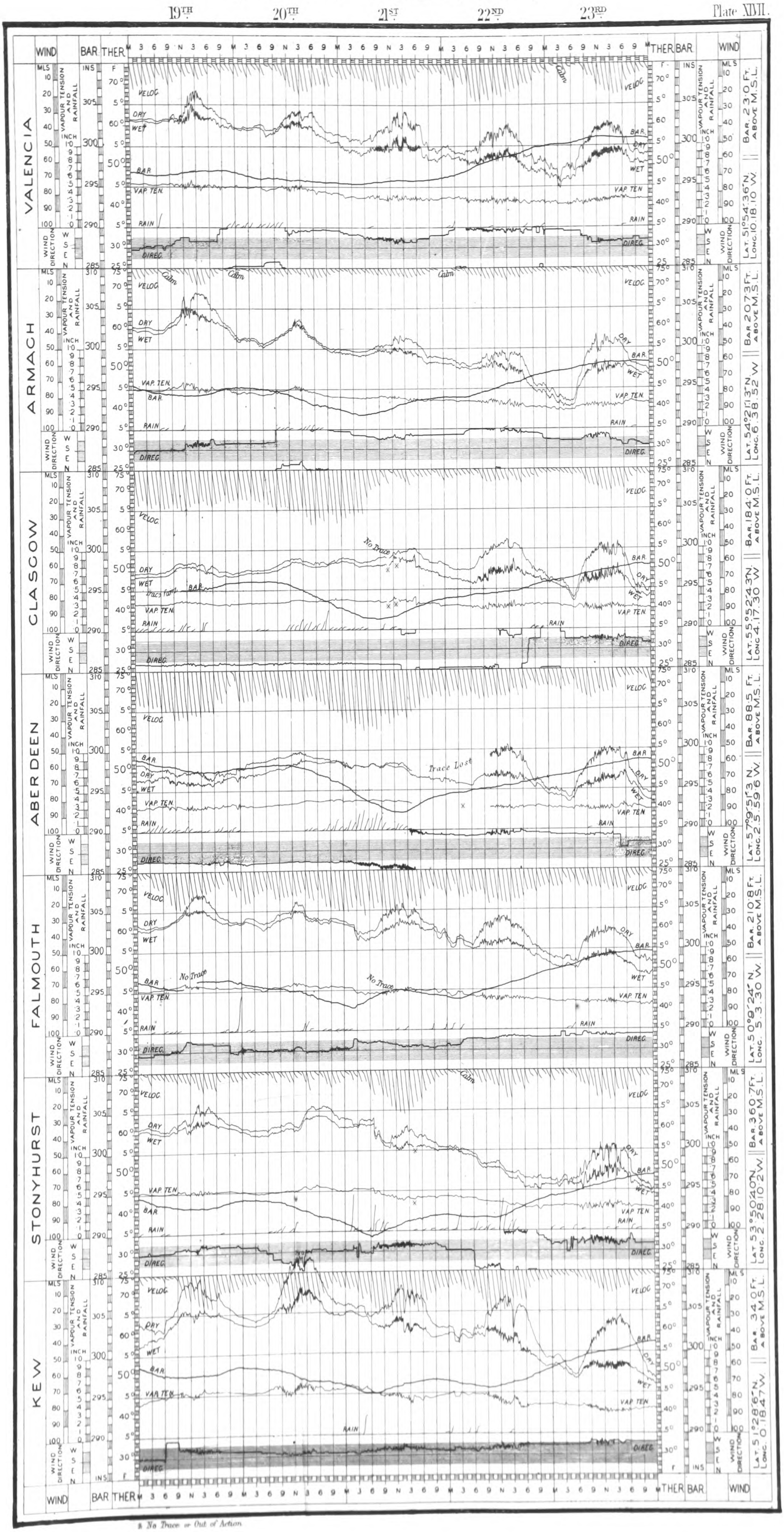
AUGUST — 1877.

Plate XLVII.



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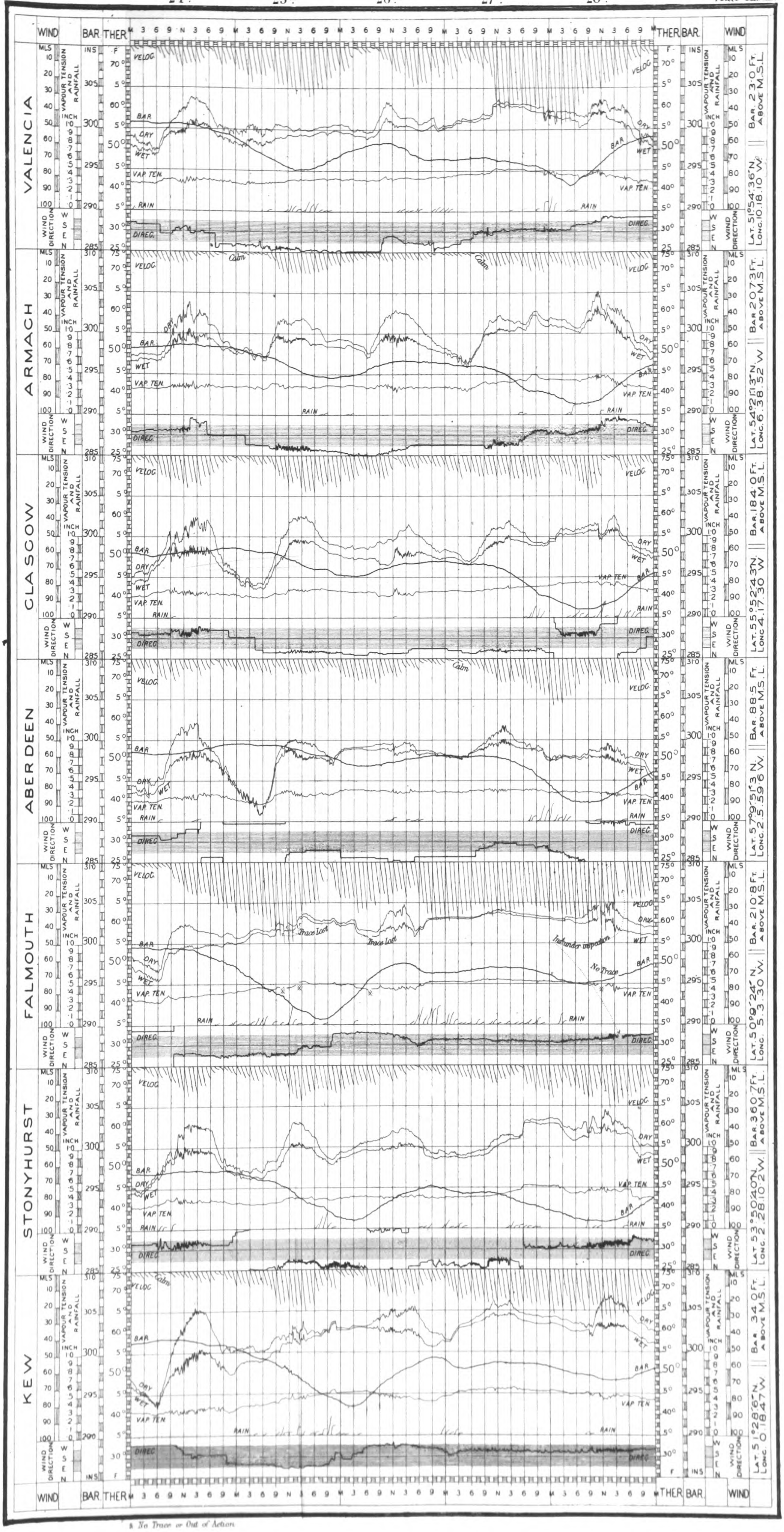
AUGUST 1877.



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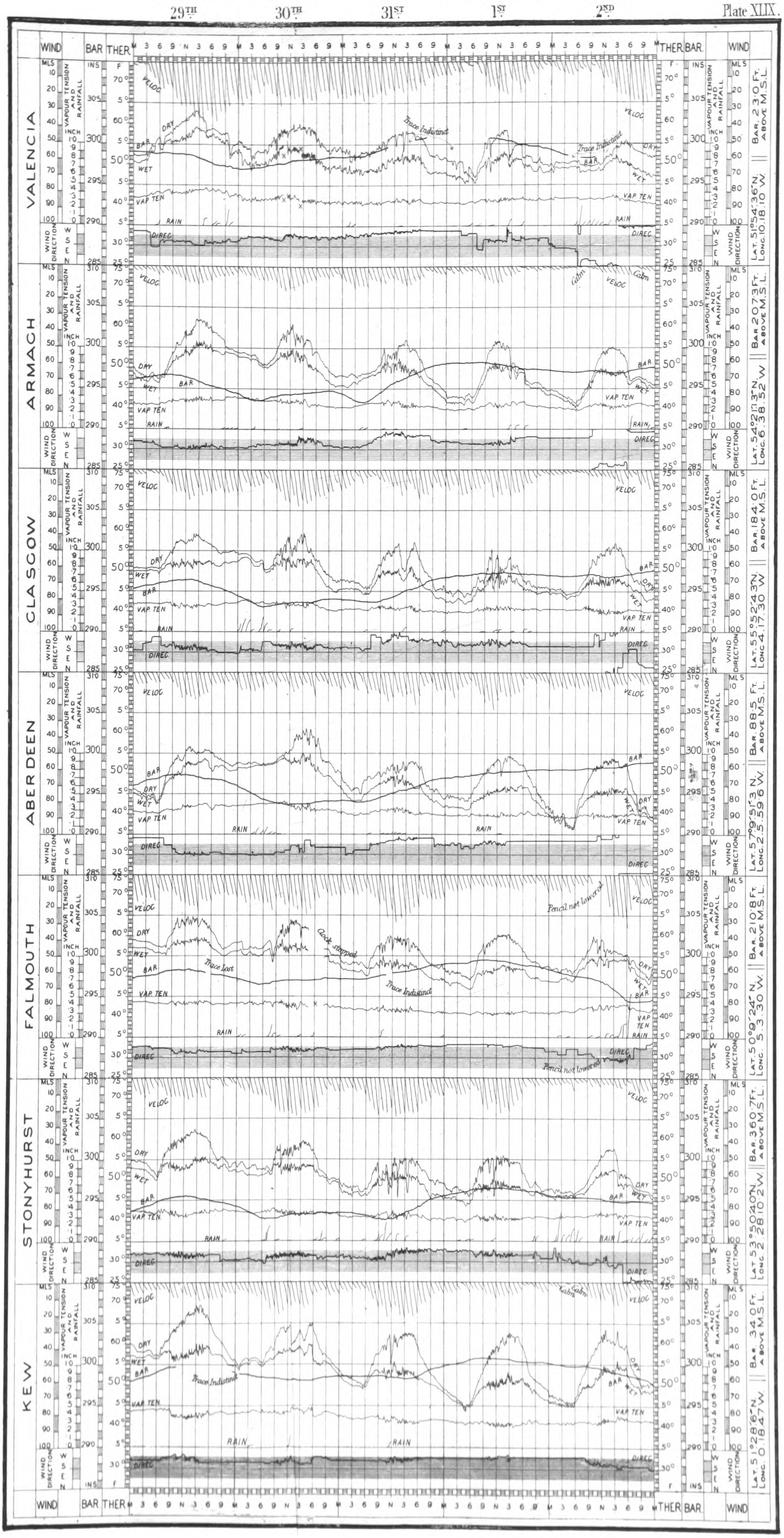
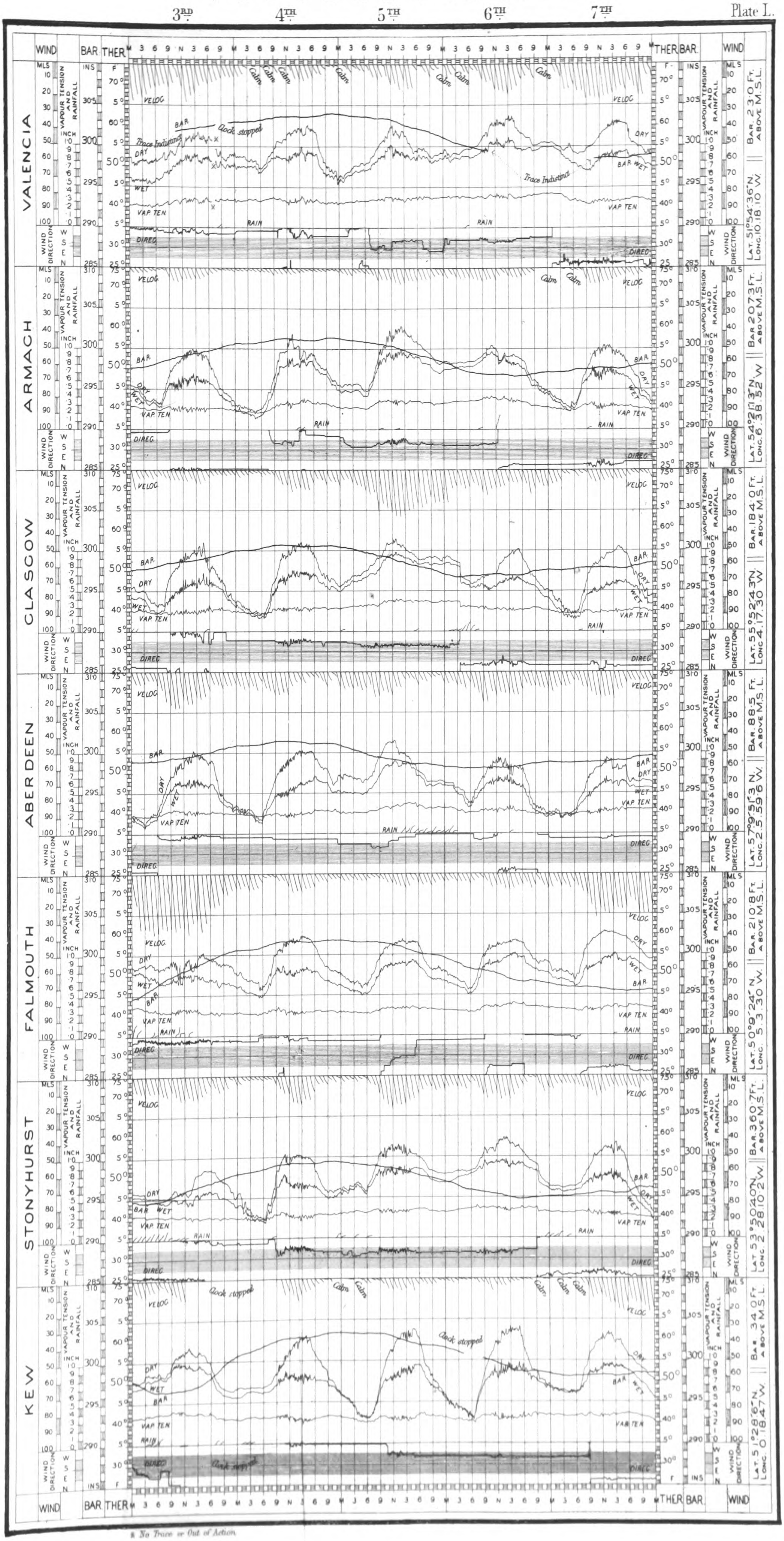
AUGUST & SEPTEMBER — 1877.

Plate XLIX.



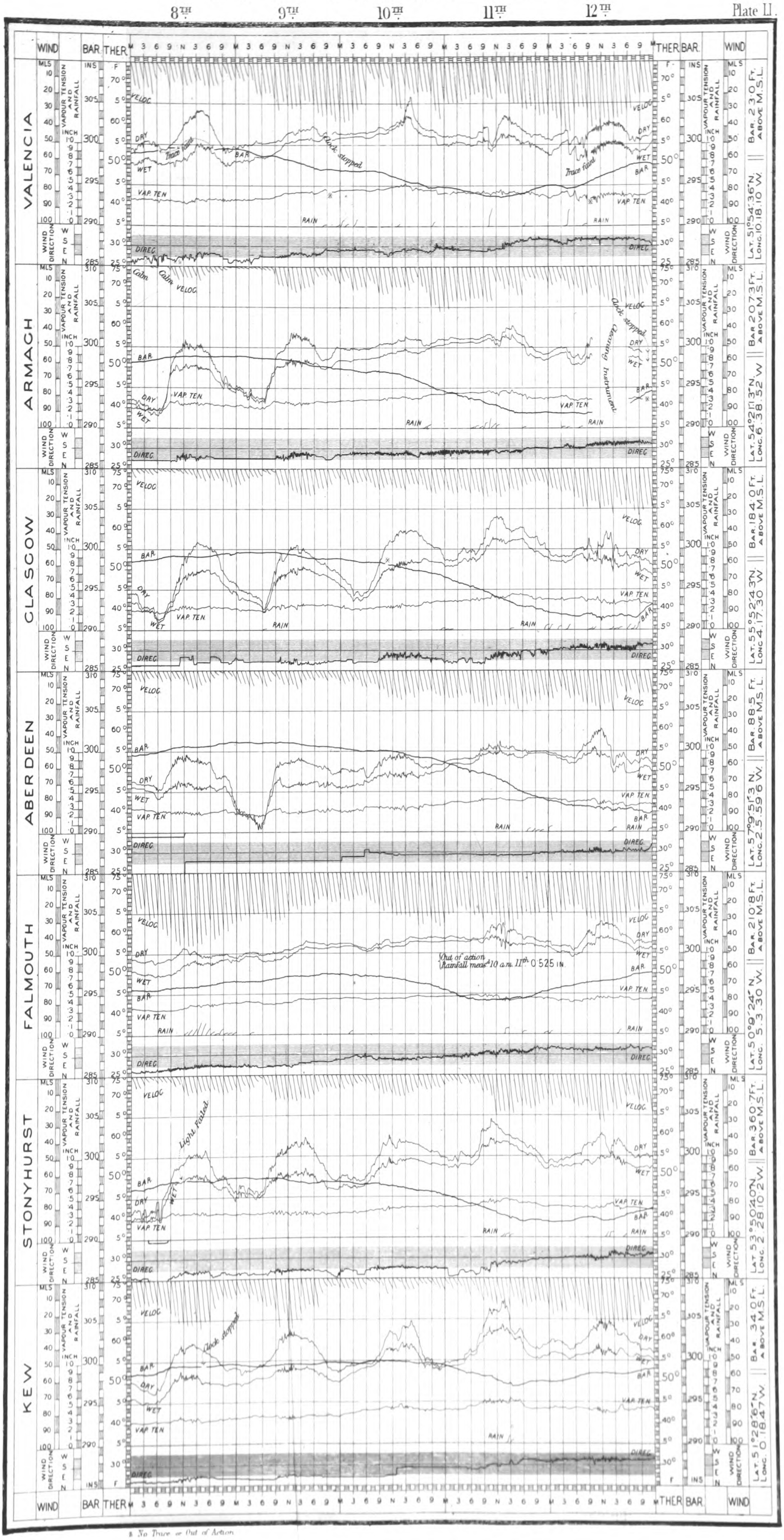
SEPTEMBER 1877.

Plate L.



* No Trace or Out of Action.

SEPTEMBER — 1877.



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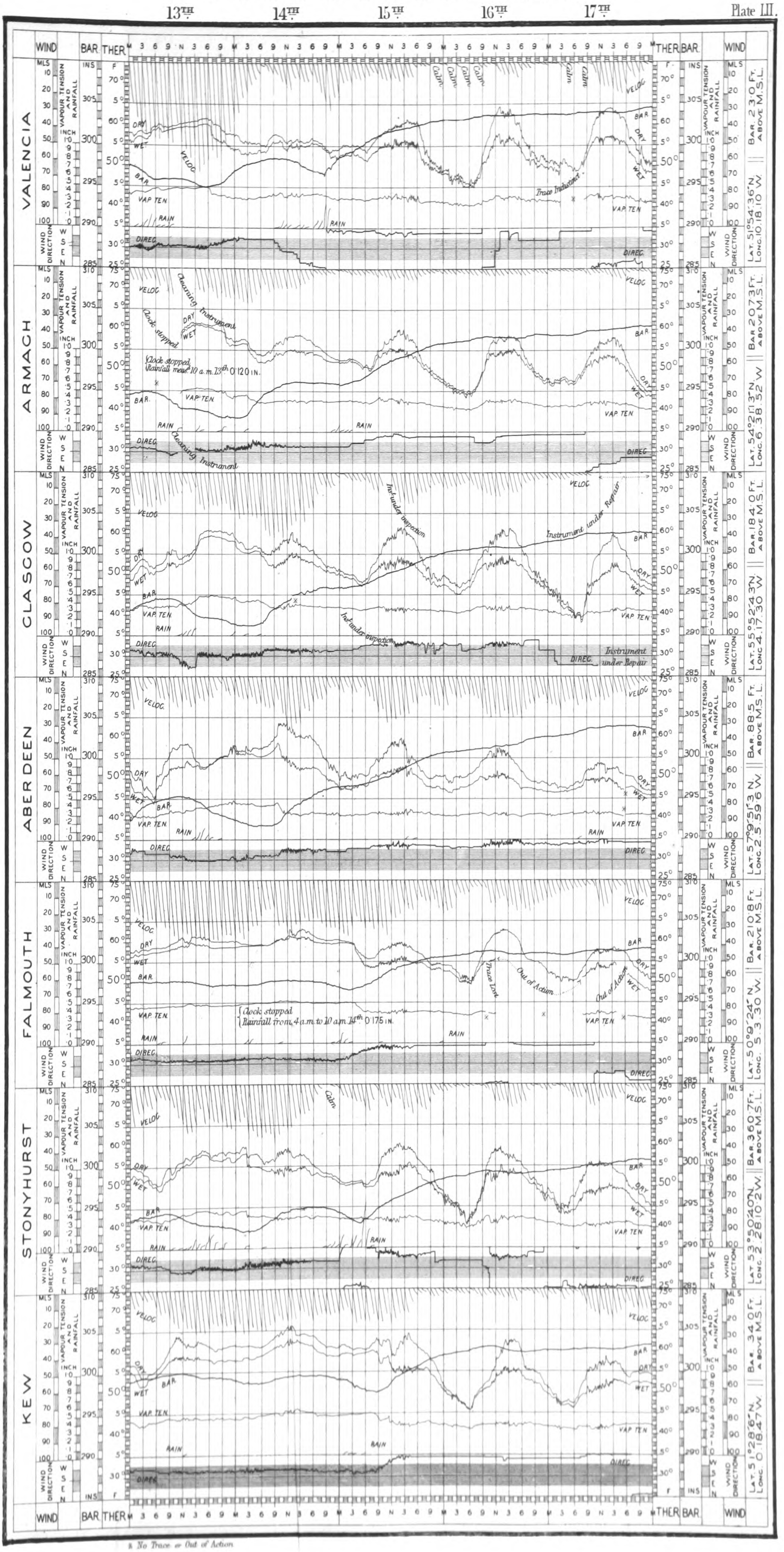
SEPTEMBER — 1877.

Plate LII.



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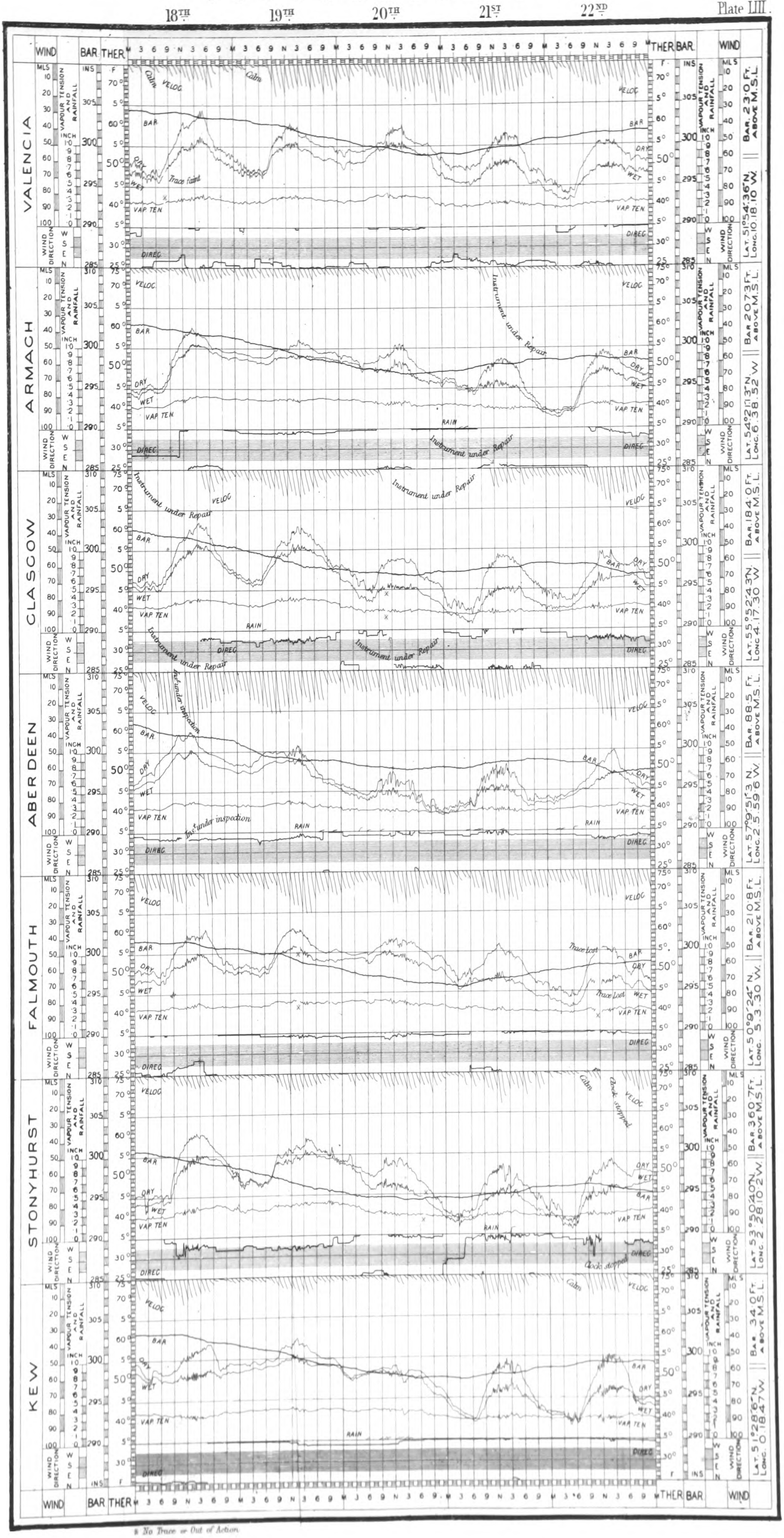
SEPTEMBER — 1877.

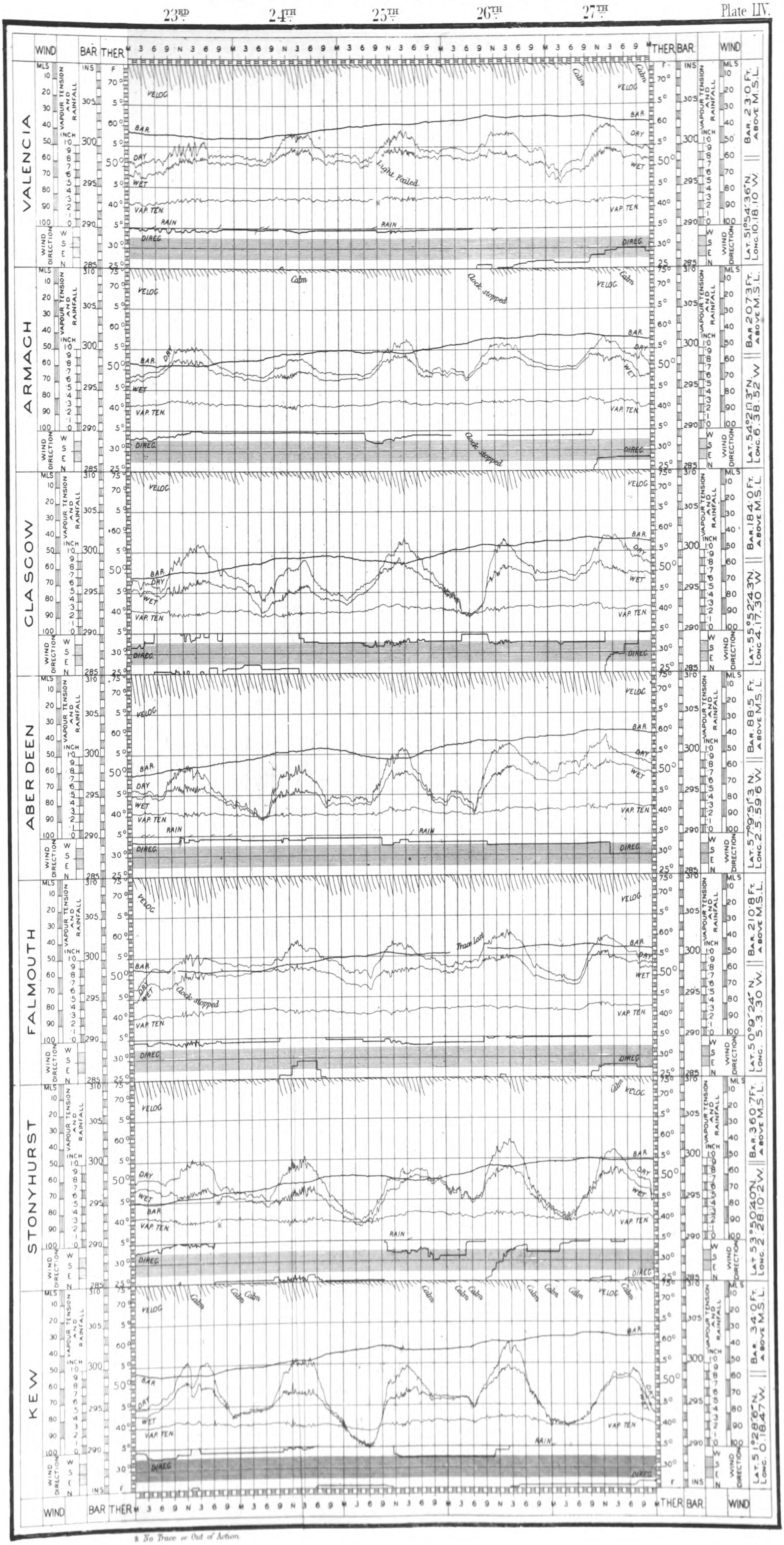
Plate LIII.



* No Trace or Out of Action.

SEPTEMBER — 1877.

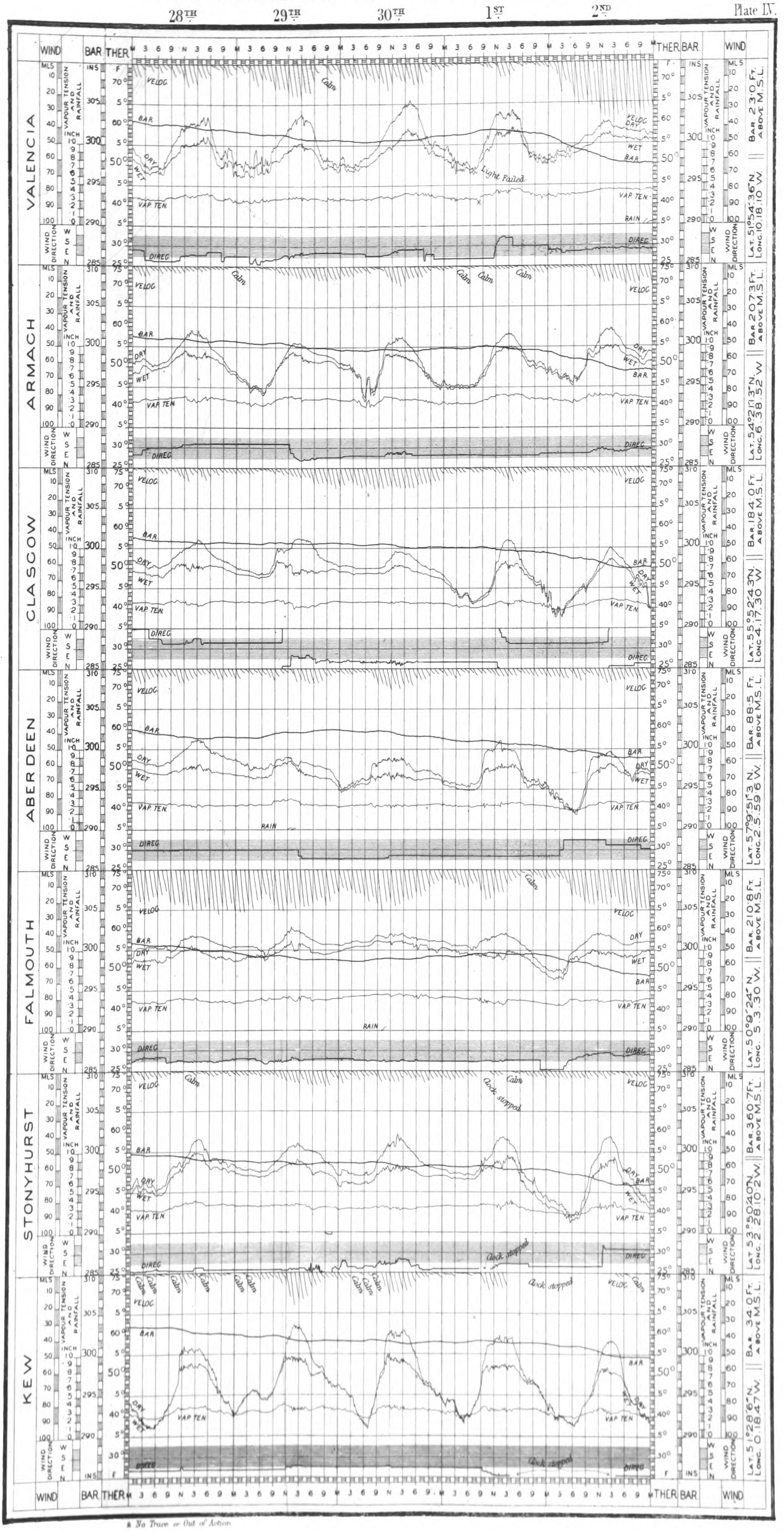
Plate LIV.



* No Trace or Out of Action.

SEPTEMBER & OCTOBER _ 1877.

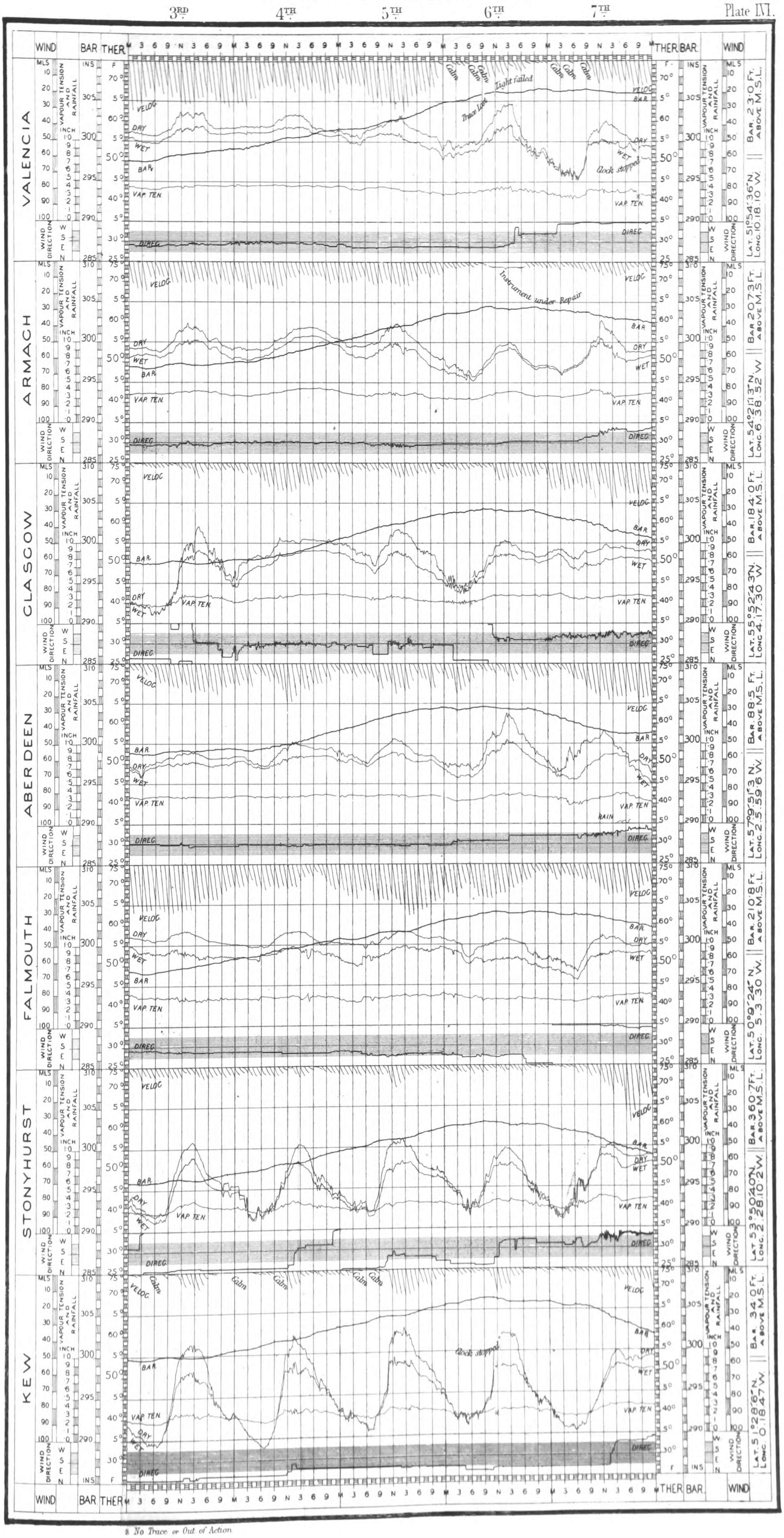
Plate LV.



* No Trace or Out of Action

OCTOBER — 1877.

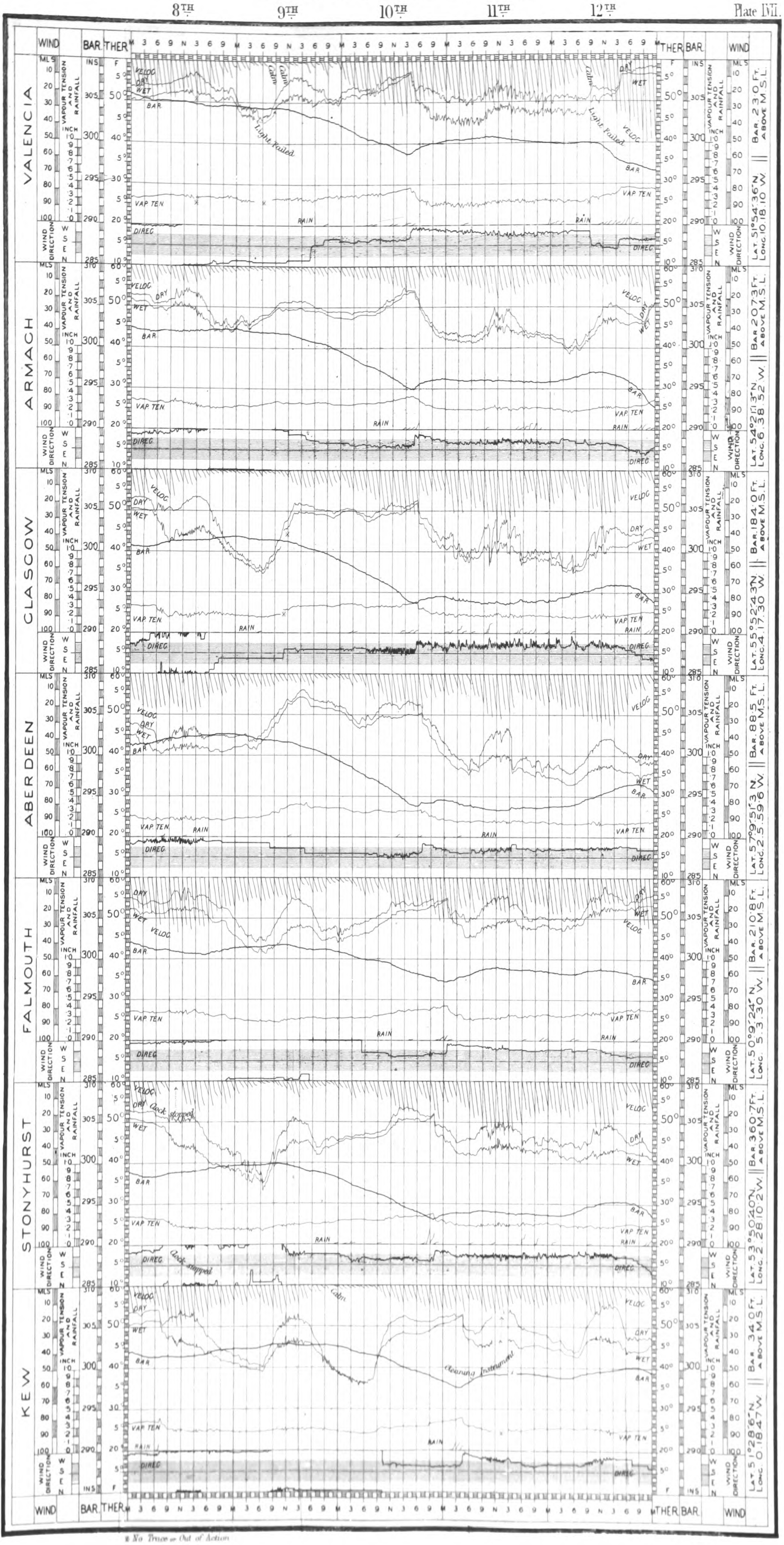
Plate VI.



* No Trace or Out of Action.

OCTOBER — 1877.

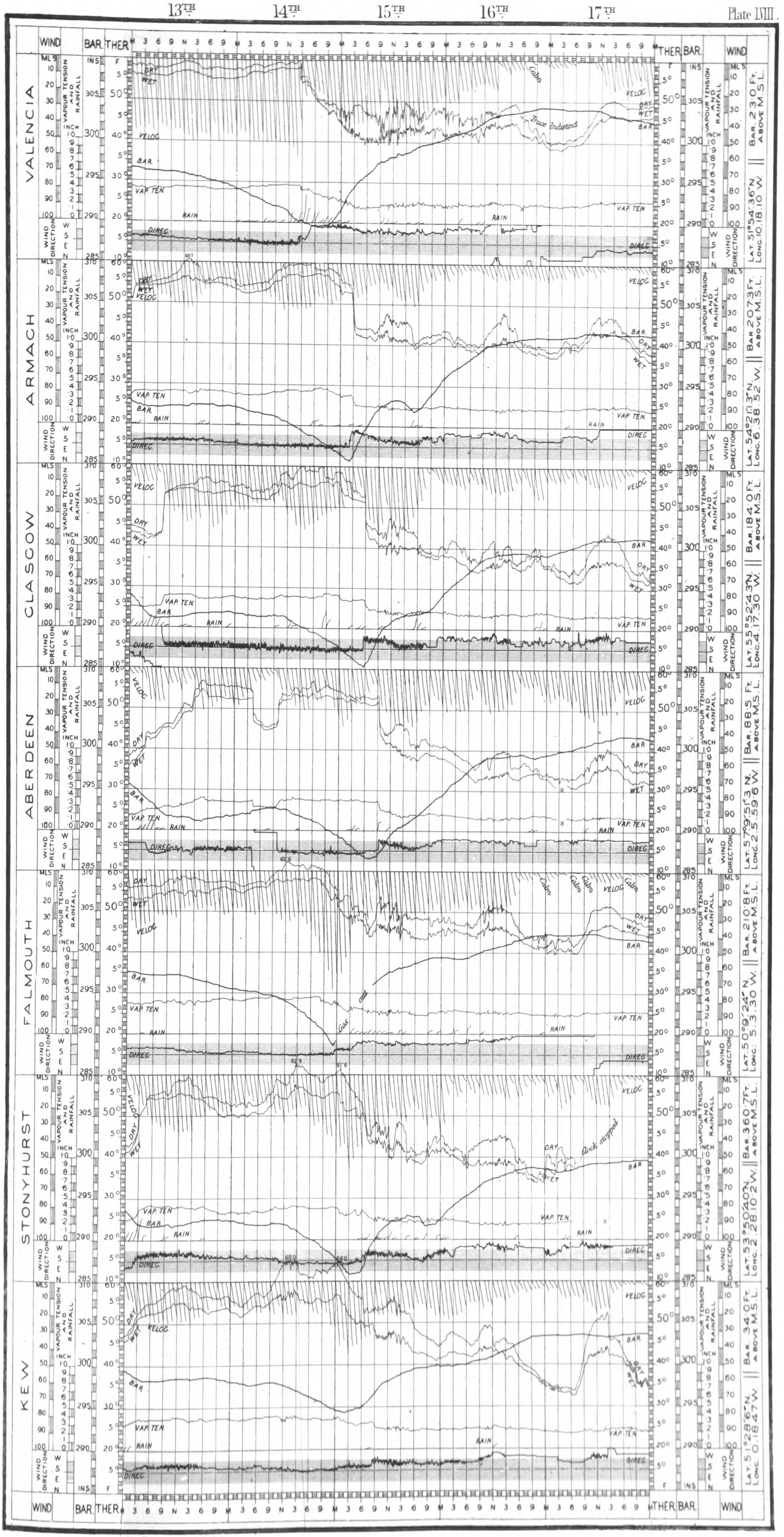
Plate LVII.



* No Trace = Out of Action

OCTOBER — 1877.

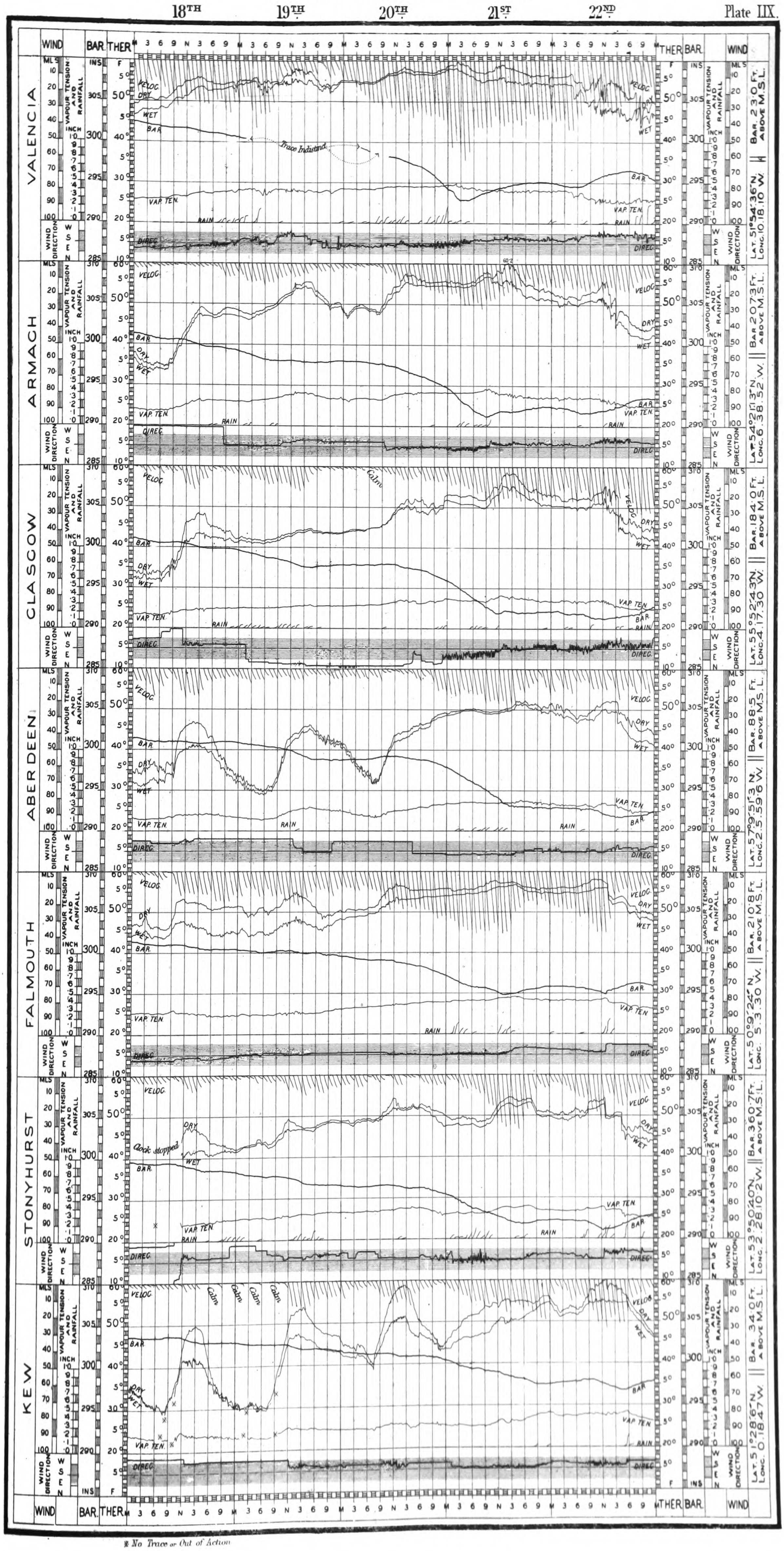
Plate LVIII.



‡ No Trace or Out of Action

OCTOBER — 1877.

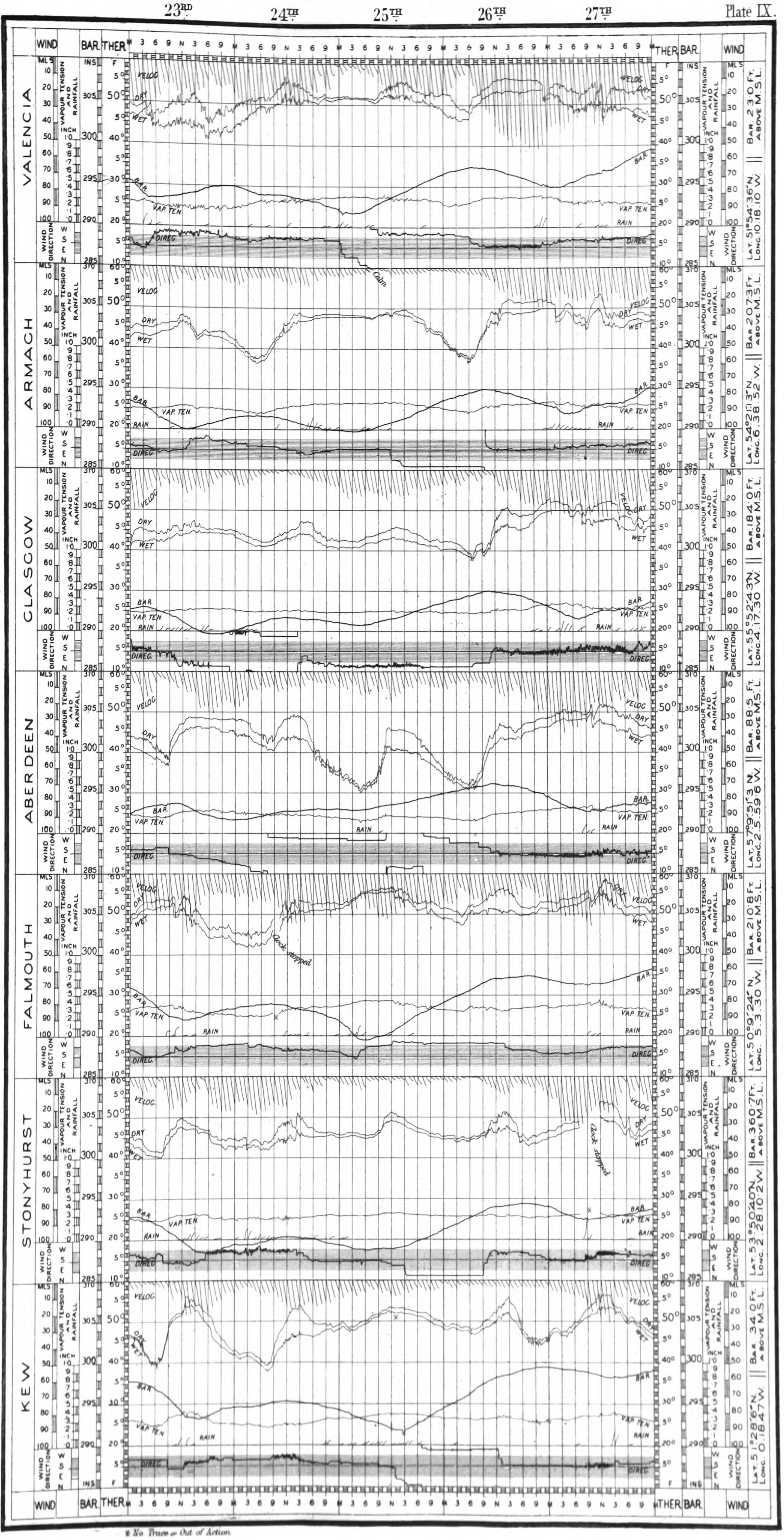
Plate LIX.



× No Trace or Out of Action

OCTOBER — 1877.

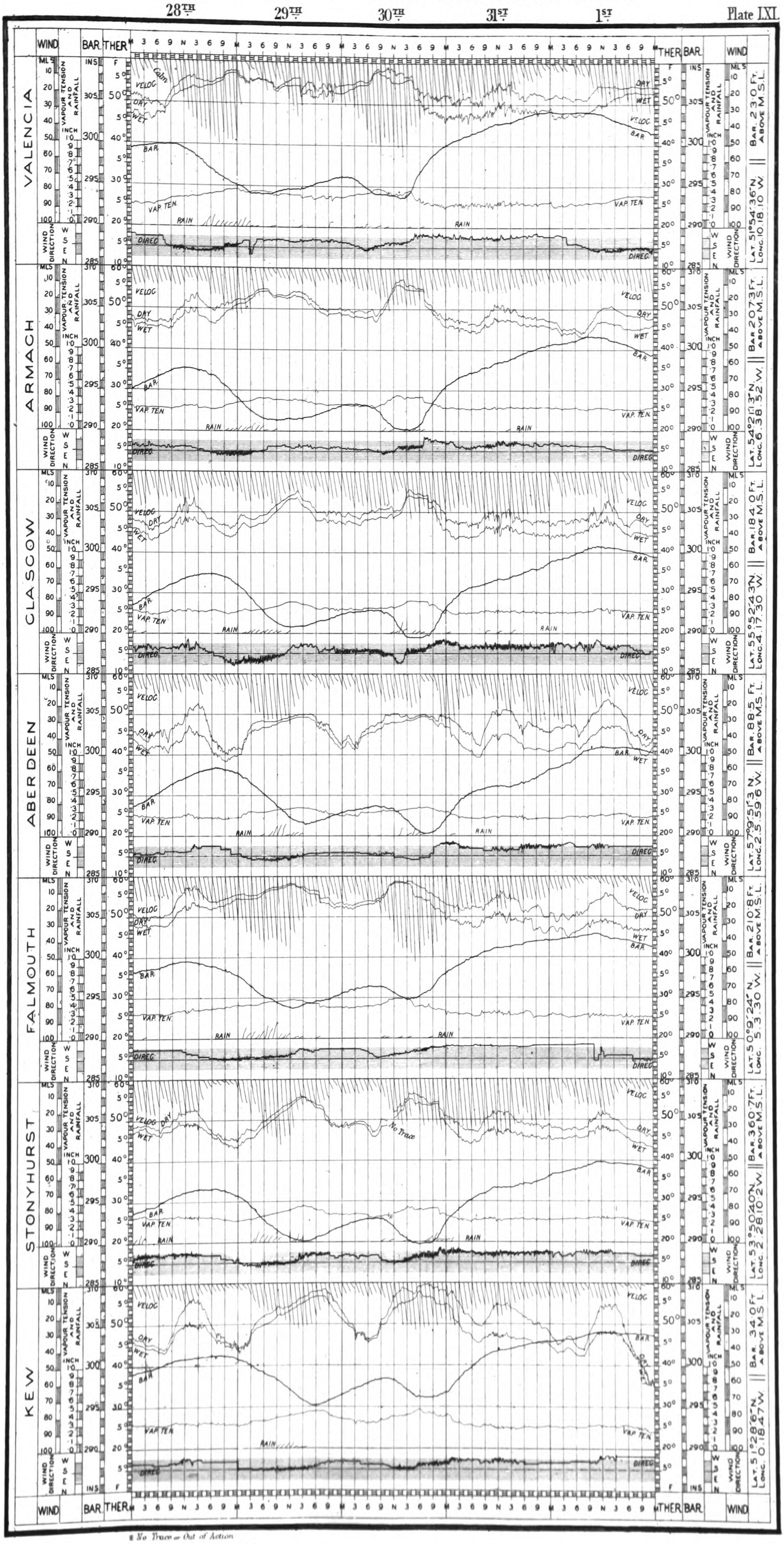
Plate IX.



* No Trace = Out of Action

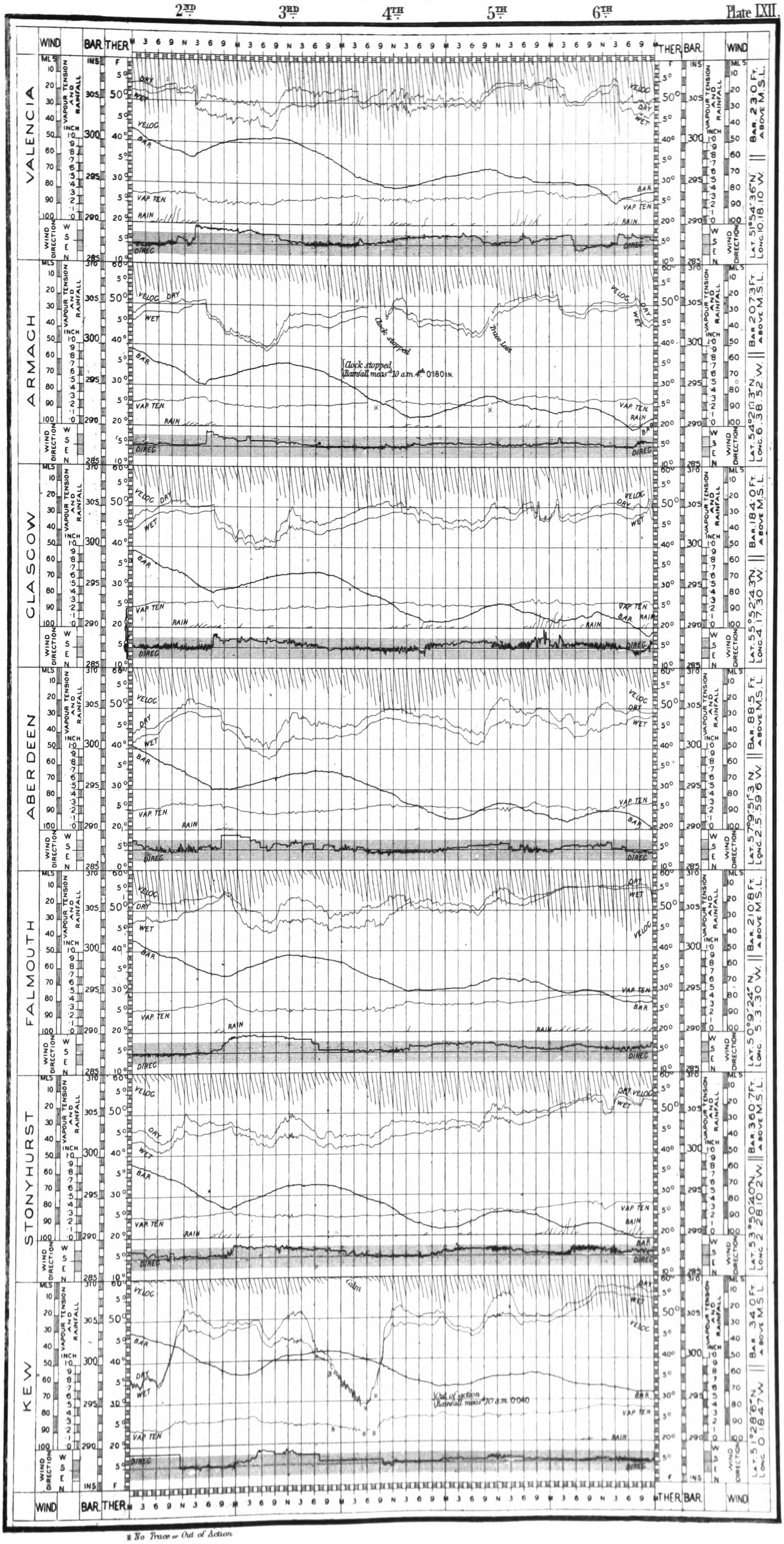
OCTOBER & NOVEMBER _ 1877.

Plate LXI.



* No Trace = Out of Action

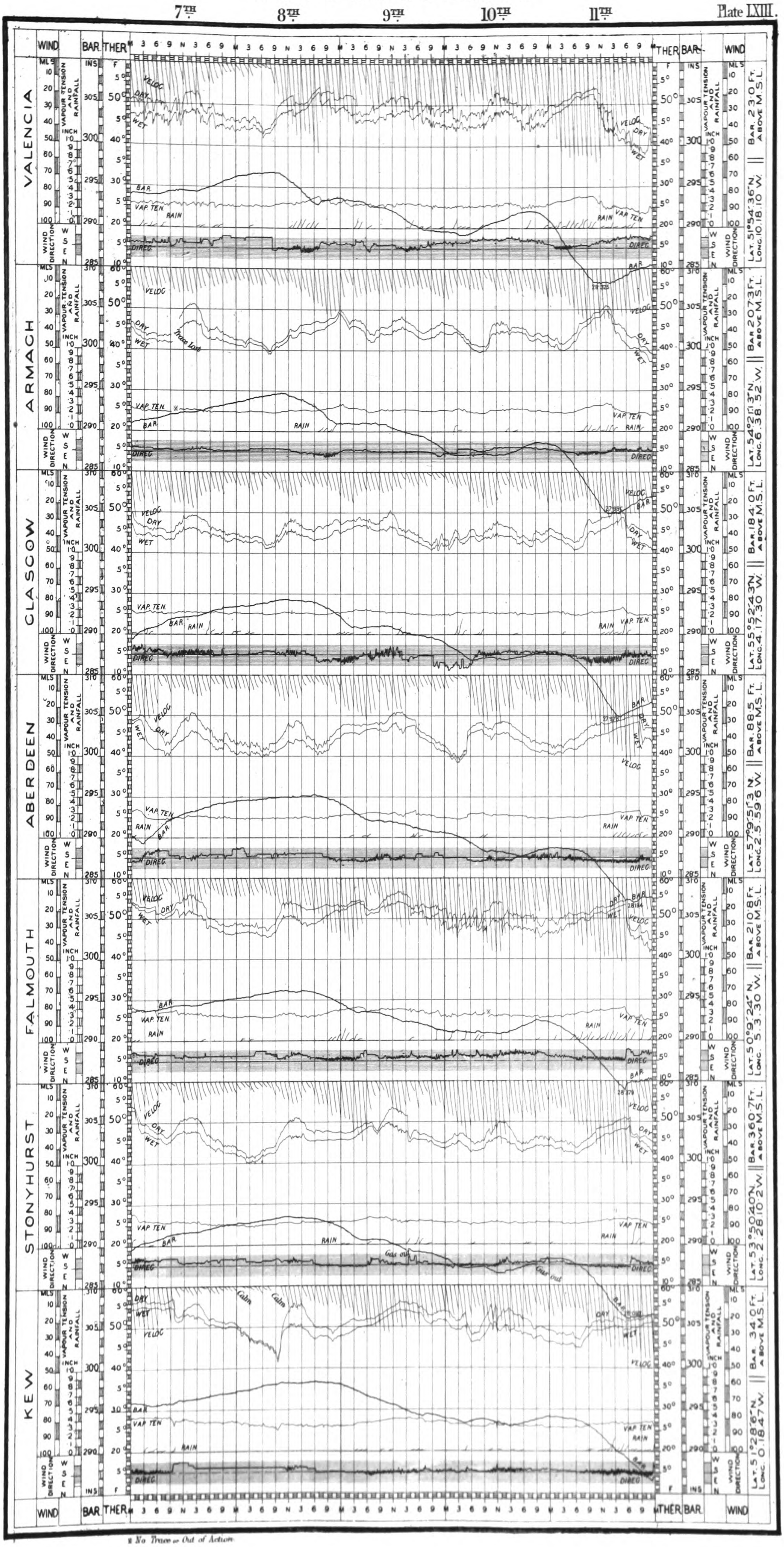
NOVEMBER _ 1877.



* No Trace or Out of Action

NOVEMBER _ 1877.

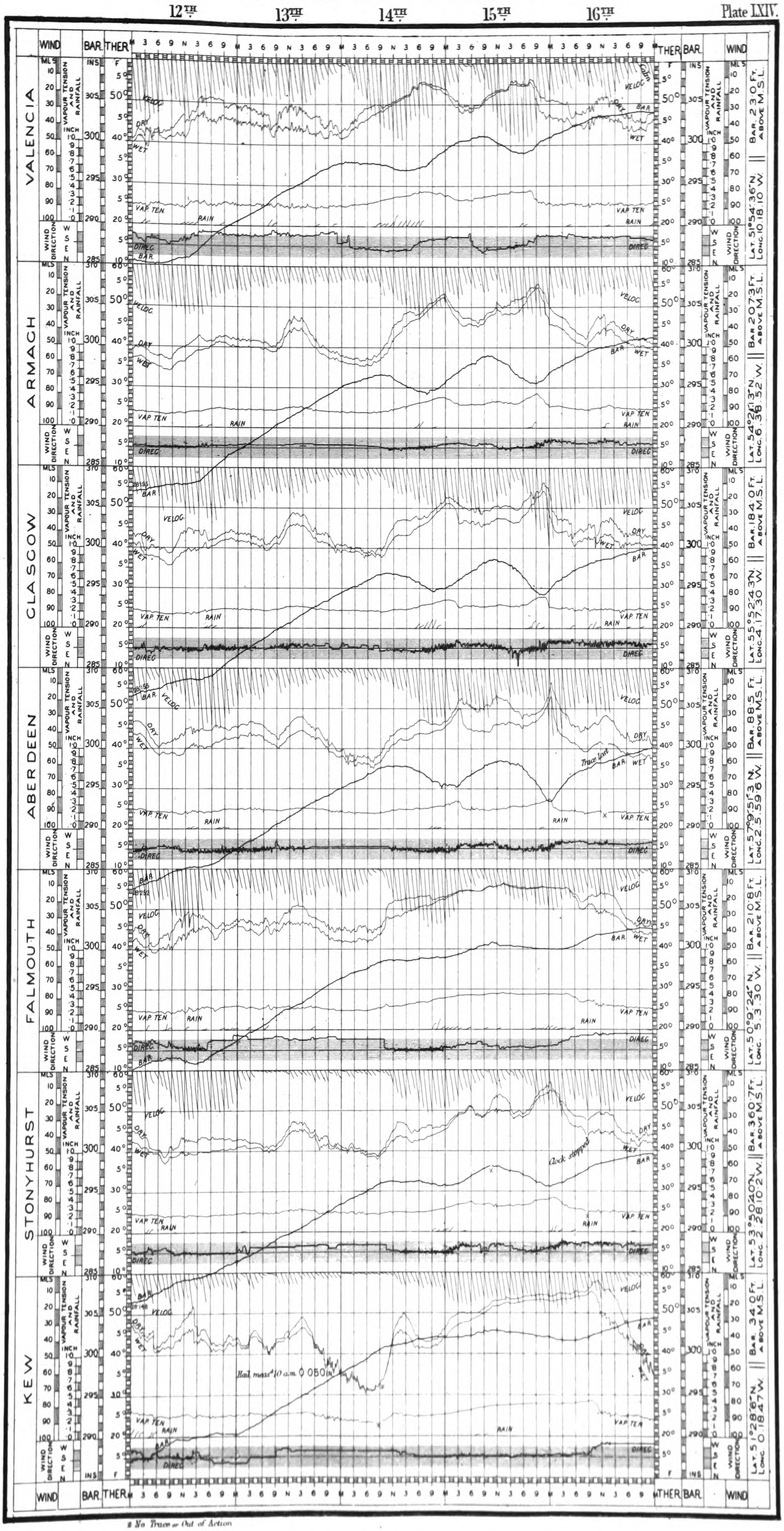
Plate LXIII.



x No Trace or Out of Action.

NOVEMBER 1877.

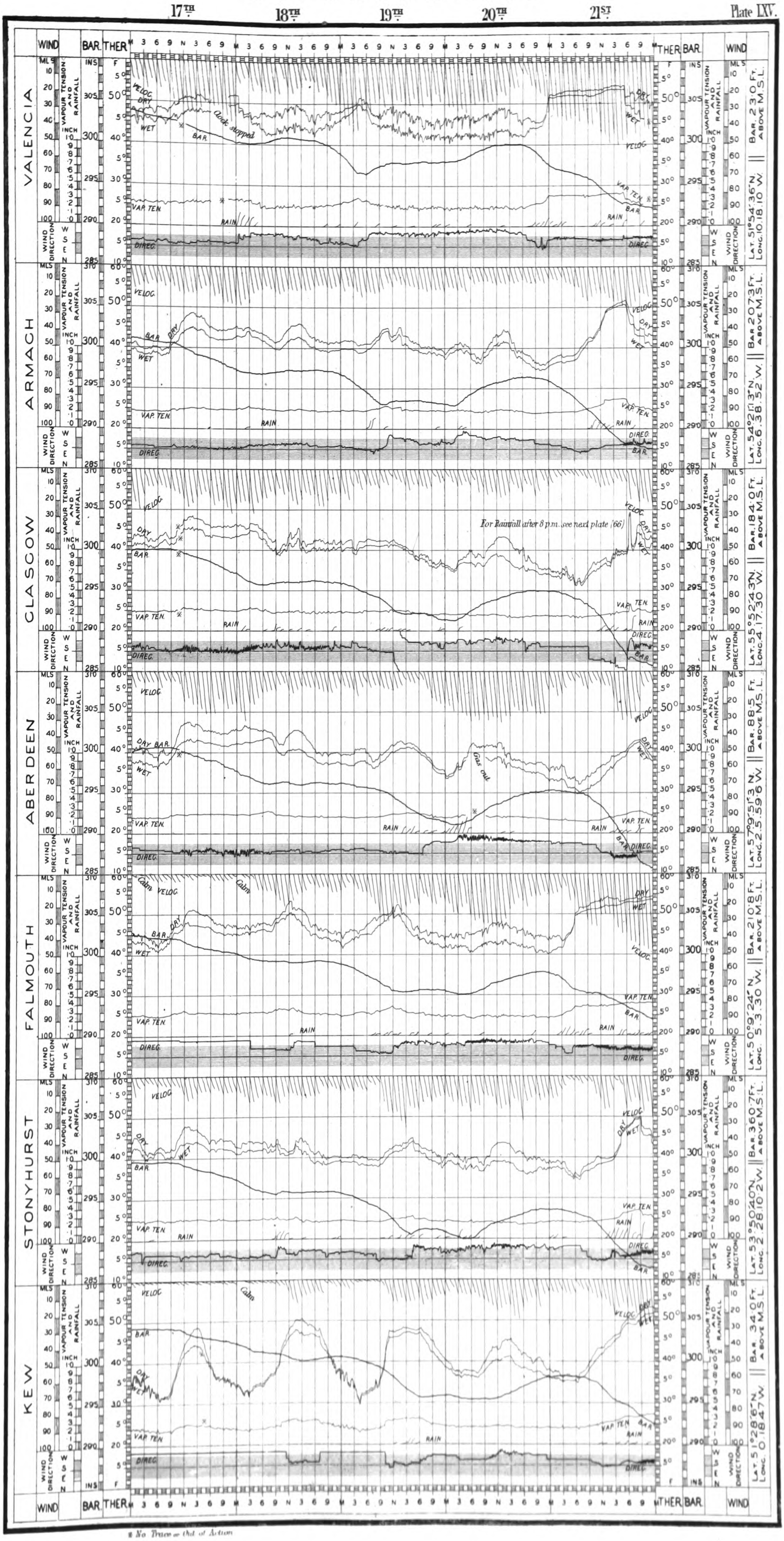
Plate LXIV.



* No Trace or Out of Action

NOVEMBER_1877.

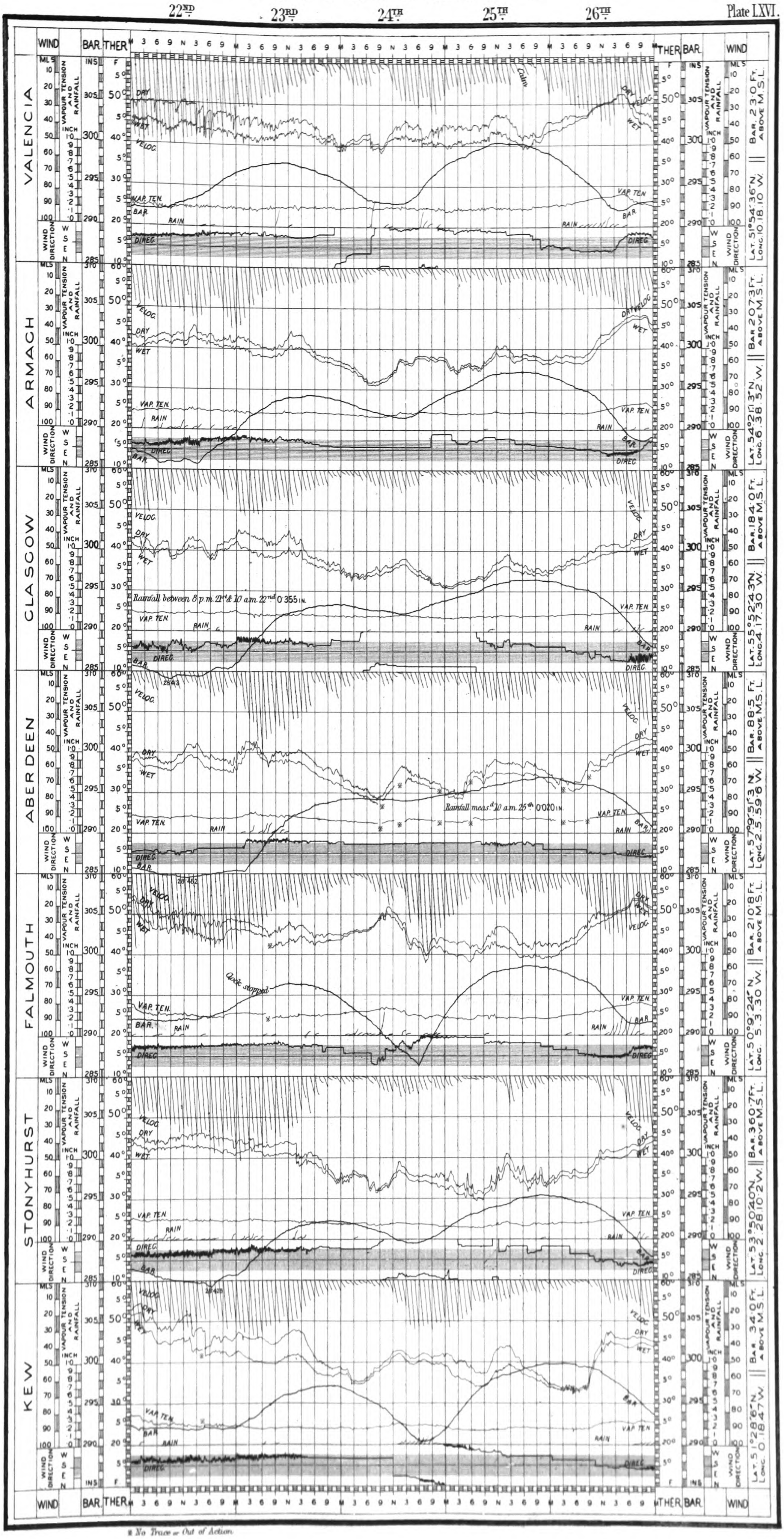
Plate LXV.



* No Trace or Out of Action

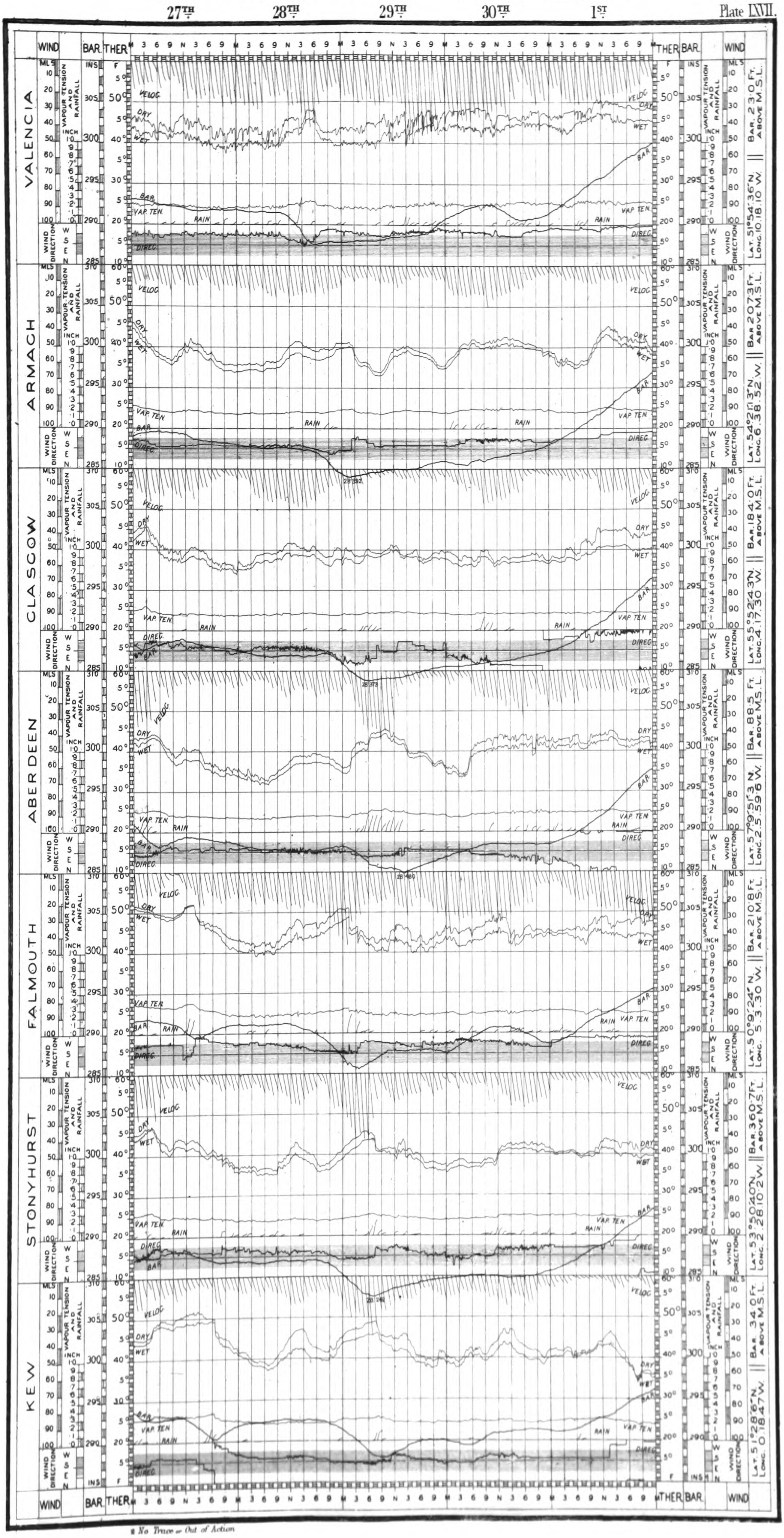
NOVEMBER_1877.

Plate LXVI.



* No Trace or Out of Action

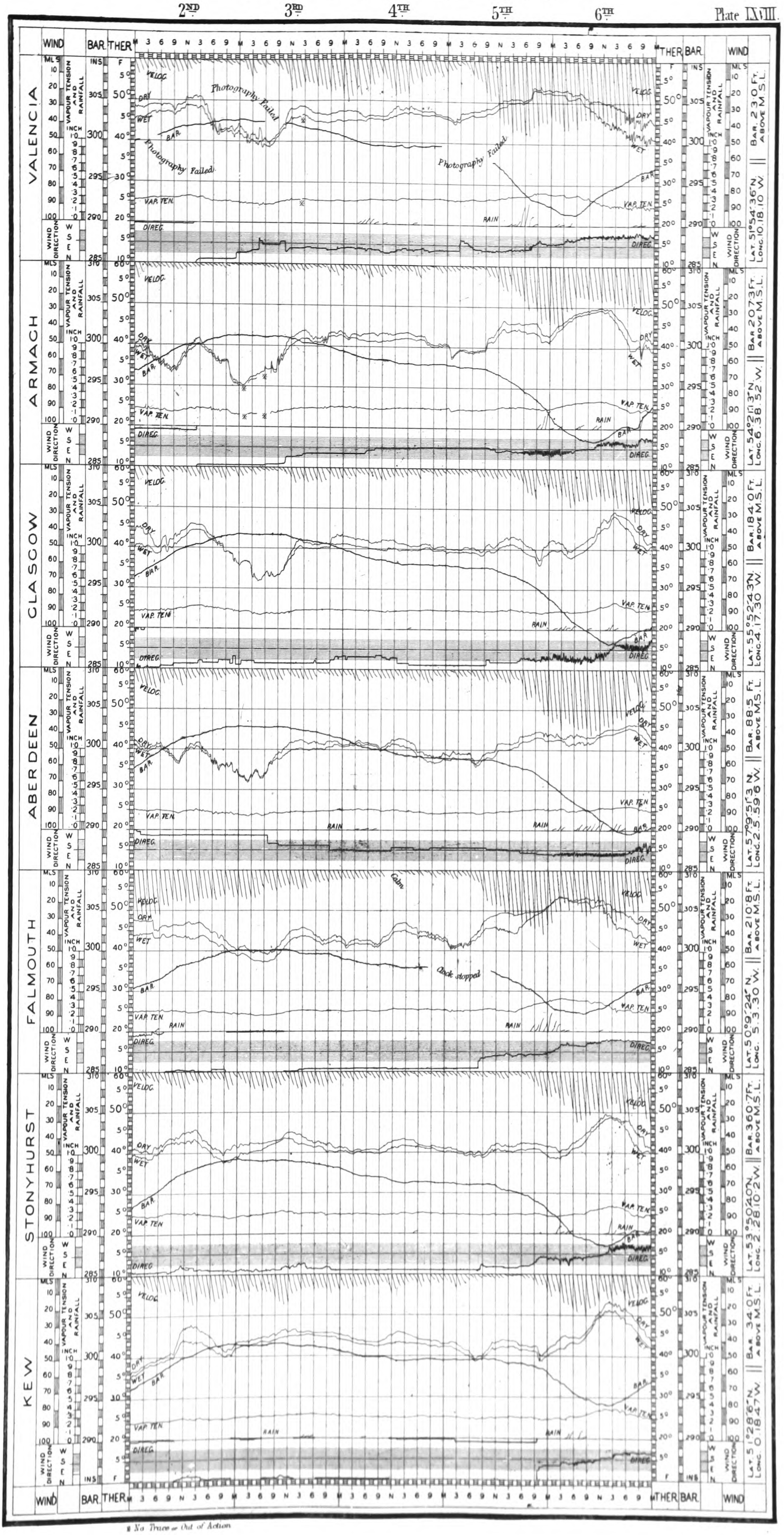
NOVEMBER & DECEMBER_1877.



* No Trace = Out of Action

DECEMBER — 1877.

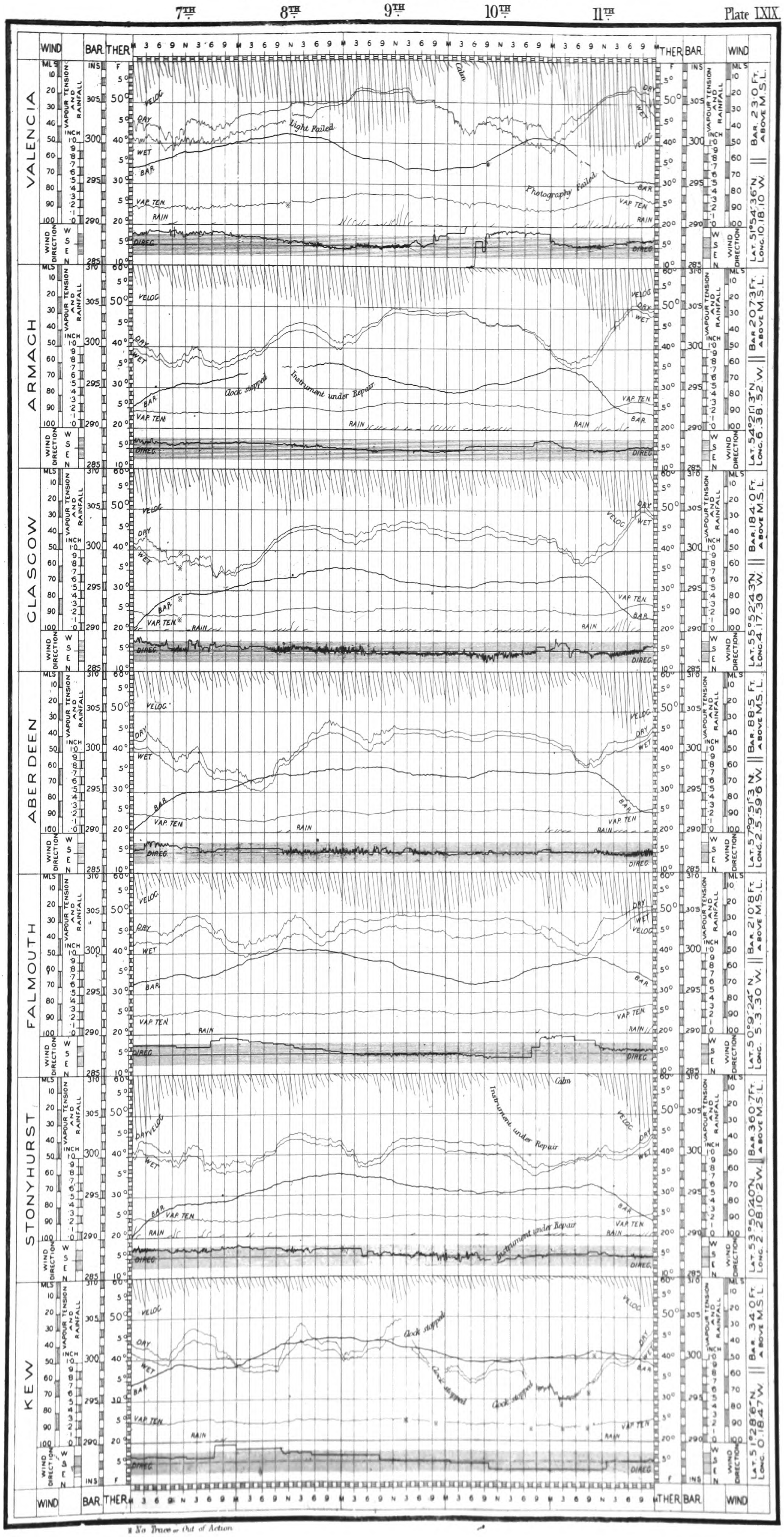
Plate LXVIII.



* No Trace or Out of Action

DECEMBER — 1877.

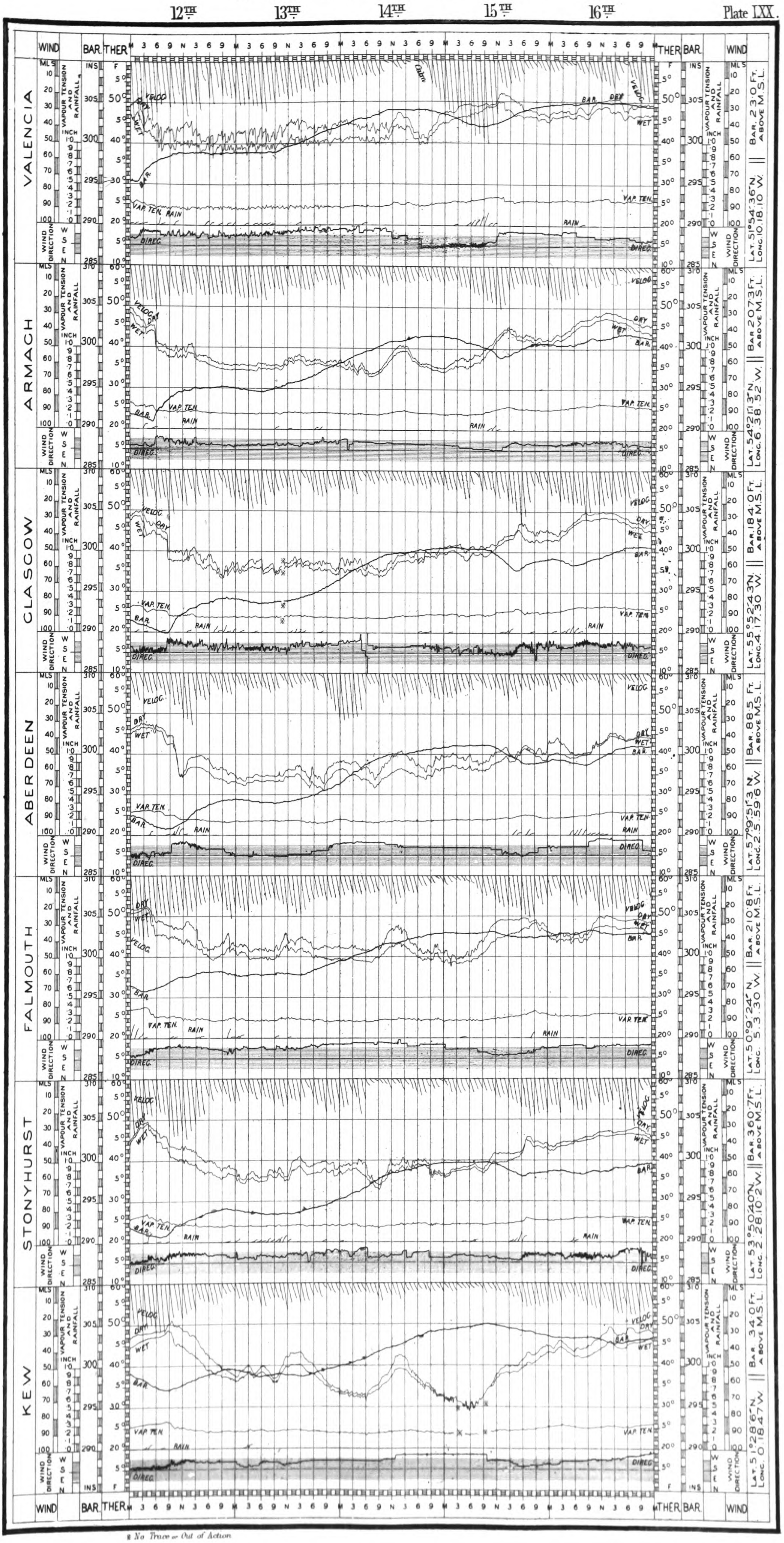
Plate LXIX.



* No Trace or Out of Action

DECEMBER — 1877.

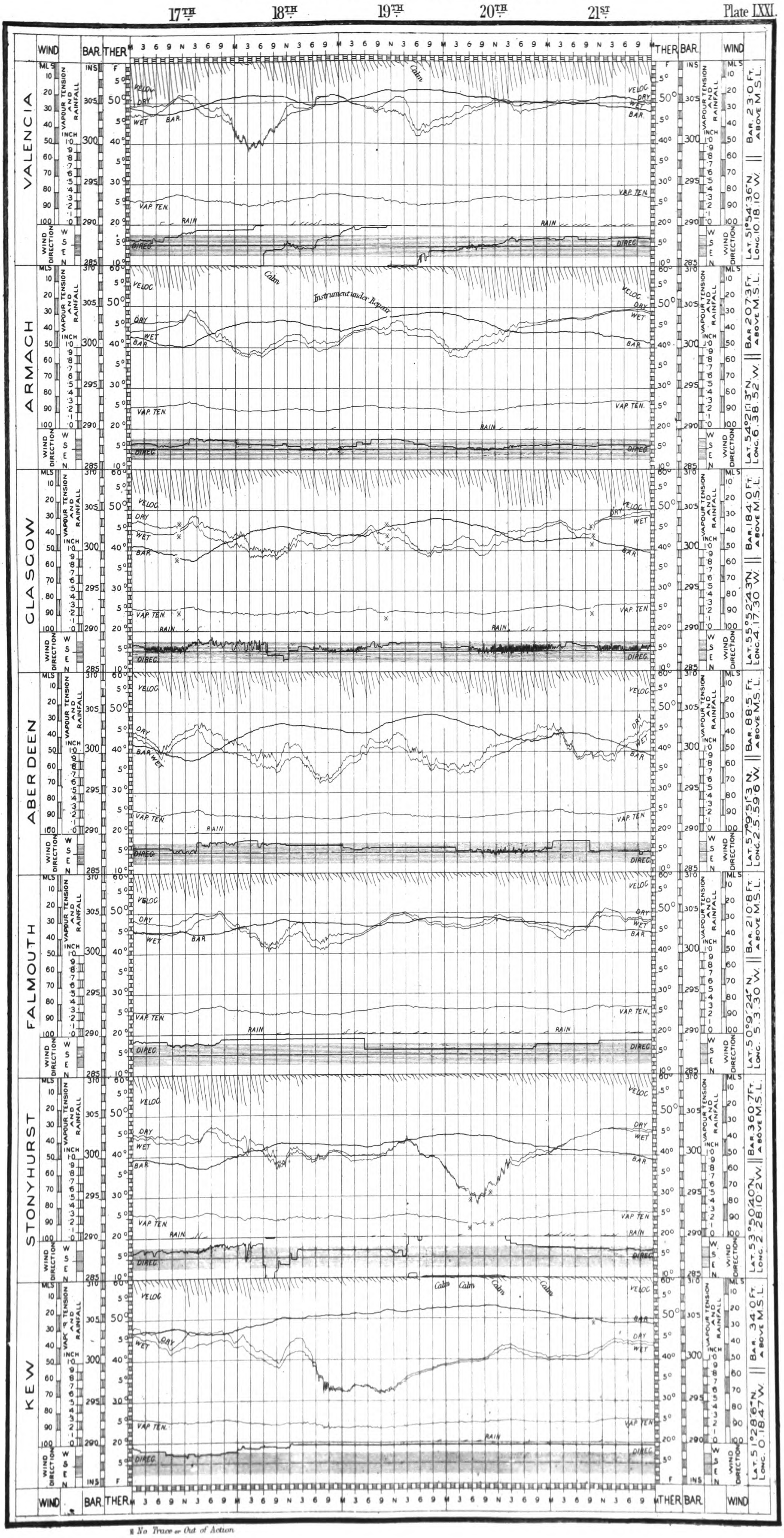
Plate LXX.



* No Trace or Out of Action

DECEMBER — 1877.

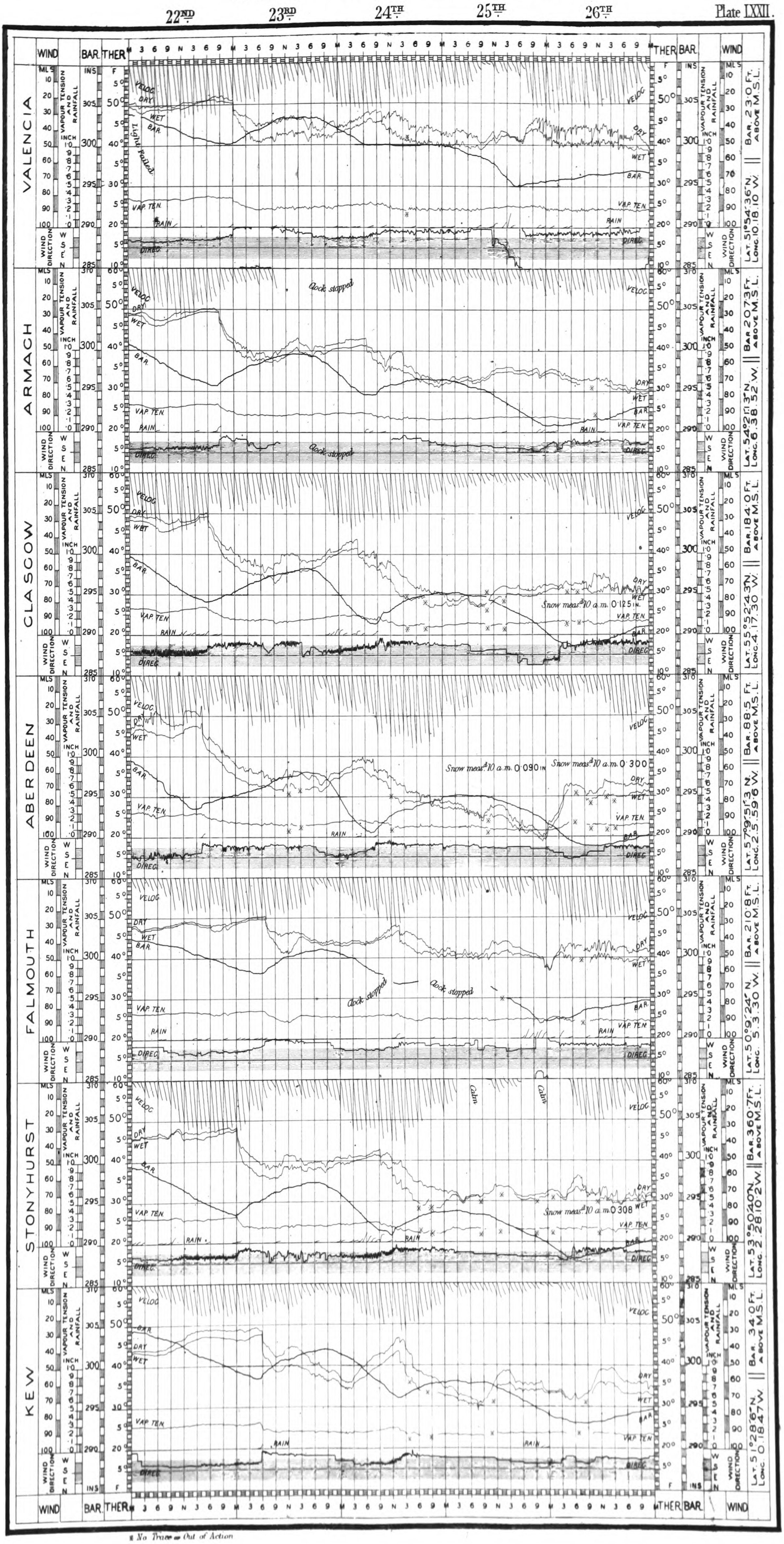
Plate LXXI.



× No Trace or Out of Action

DECEMBER — 1877.

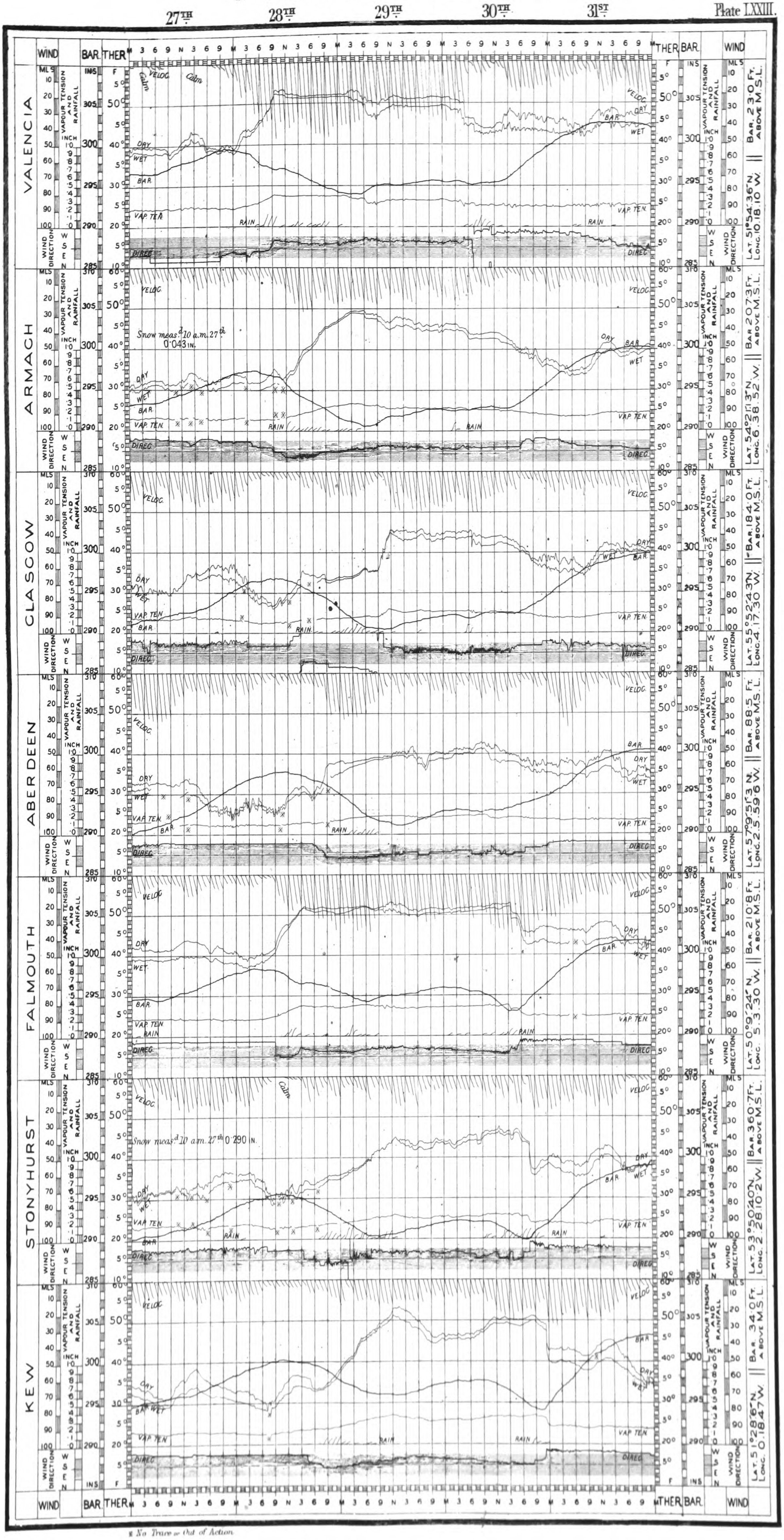
Plate LXXII.



* No Trace — Out of Action

DECEMBER 1877.

Plate LXXIII.



× No Trace or Out of Action